CALL NO. 323

CONTRACT ID. 141254

CAMPBELL COUNTY

FED/STATE PROJECT NUMBER FD04 SPP 008 0009 021-023

DESCRIPTION KY 9

WORK TYPE GRADE & DRAIN AND PAVEMENT ALTERNATES

PRIMARY COMPLETION DATE 5/15/2016

LETTING DATE: August 22,2014

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 AM EASTERN DAYLIGHT TIME August 22,2014. Bids will be publicly announced at 10:00 AM EASTERN DAYLIGHT TIME.

PLANS AVAILABLE FOR THIS PROJECT.

REQUIRED BID PROPOSAL GUARANTY: Not less than 5% of the total bid.

TABLE OF CONTENTS

PART I

SCOPE OF WORK

ADMINISTRATIVE DISTRICT - 06

CONTRACT ID - 141254

FD04 SPP 008 0009 021-023

COUNTY - CAMPBELL

PCN - DE0190091454
FD04 SPP 008 0009 021-023

KY 9 RECONSTRUCT KY 9 ALONG A NEW ROUTE FROM MP 21.643 TO NORTH OF 10TH STREET., A DISTANCE OF 0.41 MILES.GRADE & DRAIN AND PAVEMENT ALTERNATES SYP NO. 06-08101.10.

GEOGRAPHIC COORDINATES LATITUDE 39:04:52.00 LONGITUDE 84:29:53.00

COMPLETION DATE(S):

COMPLETED BY 05/15/2016 APPLIES TO ENTIRE CONTRACT

CONTRACT NOTES

PROPOSAL ADDENDA

All addenda to this proposal must be applied when calculating bid and certified in the bid packet submitted to the Kentucky Department of Highways. Failure to use the correct and most recent addenda may result in the bid being rejected.

BID SUBMITTAL

Bidder must use the Department's Expedite Bidding Program available on the Internet web site of the Department of Highways, Division of Construction Procurement. (www.transportation.ky.gov/construction-procurement)

The Bidder must download the bid file located on the Bid Express website (www.bidx.com) to prepare a bid packet for submission to the Department. The bidder must submit electronically using Bid Express.

JOINT VENTURE BIDDING

Joint venture bidding is permissible. All companies in the joint venture must be prequalified in one of the work types in the Qualifications for Bidders for the project. The bidders must get a vendor ID for the joint venture from the Division of Construction Procurement and register the joint venture as a bidder on the project. Also, the joint venture must obtain a digital ID from Bid Express to submit a bid. A joint bid bond of 5% may be submitted for both companies or each company may submit a separate bond of 5%.

UNDERGROUND FACILITY DAMAGE PROTECTION

The contractor is advised that the Underground Facility Damage Protection Act of 1994, became law January 1, 1995. It is the contractor's responsibility to determine the impact of the act regarding this project, and take all steps necessary to be in compliance with the provision of the act.

SPECIAL NOTE FOR PIPE INSPECTION

Contrary to Section 701.03.08 of the 2012 Standard Specifications for Road and Bridge Construction and Kentucky Method 64-114, certification by the Kentucky Transportation Center for prequalified Contractors to perform laser/video inspection is not required on this contract. It will continue to be a requirement for the Contractor performing any laser/video pipe inspection to be prequalified for this specialized item with the Kentucky Transportation Cabinet-Division of Construction Procurement.

SPECIAL NOTE FOR COMPOSITE OFFSET BLOCKS

Contrary to the Standard Drawings (2012 edition) the Cabinet will allow 6" composite offset blocks in lieu of wooden offset blocks, except as specified on proprietary end treatments and crash cushions. The composite blocks shall be selected from the Cabinet's List of Approved Materials.

REGISTRATION WITH THE SECRETARY OF STATE BY A FOREIGN ENTITY

Pursuant to KRS 176.085(1)(b), an agency, department, office, or political subdivision of the Commonwealth of Kentucky shall not award a state contract to a person that is a foreign entity required by KRS 14A.9-010 to obtain a certificate of authority to transact business in the Commonwealth ("certificate") from the Secretary of State under KRS 14A.9-030 unless the person produces the certificate within fourteen (14) days of the bid or proposal opening. If the foreign entity is not required to obtain a certificate as provided in KRS 14A.9-010, the foreign entity should identify the applicable exception. Foreign entity is defined within KRS 14A.1-070.

For all foreign entities required to obtain a certificate of authority to transact business in the Commonwealth, if a copy of the certificate is not received by the contracting agency within the time frame identified above, the foreign entity's solicitation response shall be deemed non-responsive or the awarded contract shall be cancelled.

Businesses can register with the Secretary of State at https://secure.kentucky.gov/sos/ftbr/welcome.aspx .

SPECIAL NOTE FOR PROJECT QUESTIONS DURING ADVERTISEMENT

Questions about projects during the advertisement should be submitted in writing to the Division of Construction Procurement. This may be done by fax (502) 564-7299 or email to kytc.projectquestions@ky.gov. The Department will attempt to answer all submitted questions. The Department reserves the right not to answer if the question is not pertinent or does not aid in clarifying the project intent.

The deadline for posting answers will be 3:00 pm Eastern Daylight Time, the day preceding the Letting. Questions may be submitted until this deadline with the understanding that the later a question is submitted, the less likely an answer will be able to be provided.

The questions and answers will be posted for each Letting under the heading "Questions & Answers" on the Construction Procurement website (www.transportation.ky.gov/contract). The answers provided shall be considered part of

this Special Note and, in case of a discrepancy, will govern over all other bidding documents.

HARDWOOD REMOVAL RESTRICTIONS

The US Department of Agriculture has imposed a quarantine in Kentucky and several surrounding states, to prevent the spread of an invasive insect, the emerald ash borer. Hardwood cut in conjunction with the project may not be removed from the state. Chipping or burning on site is the preferred method of disposal.

INSTRUCTIONS FOR EXCESS MATERIAL SITES AND BORROW SITES

Identification of excess material sites and borrow sites shall be the responsibility of the Contractor. The Contractor shall be responsible for compliance with all applicable state and federal laws and may wish to consult with the US Fish and Wildlife Service to seek protection under Section 10 of the Endangered Species Act for these activities.

ACCESS TO RECORDS

The contractor, as defined in KRS 45A.030 (9) agrees that the contracting agency, the Finance and Administration Cabinet, the Auditor of Public Accounts, and the Legislative Research Commission, or their duly authorized representatives, shall have access to any books, documents, papers, records, or other evidence, which are directly pertinent to this contract for the purpose of financial audit or program review. Records and other prequalification information confidentially disclosed as part of the bid process shall not be deemed as directly pertinent to the contract and shall be exempt from disclosure as provided in KRS 61.878(1)(c). The contractor also recognizes that any books, documents, papers, records, or other evidence, received during a financial audit or program review shall be subject to the Kentucky Open Records Act, KRS 61.870 to 61.884.

In the event of a dispute between the contractor and the contracting agency, Attorney General, or the Auditor of Public Accounts over documents that are eligible for production and review, the Finance and Administration Cabinet shall review the dispute and issue a determination, in accordance with Secretary's Order 11-004. (See attachment)

10/29/12

Steven L. Beshear
Governor

Commonwealth of Kentucky
Finance and Administration Cabinet
OFFICE OF THE SECRETARY
Room 383, Capitol Annex
702 Capital Avenue
Frankfort, KY 40601-3462
(502) 564-4240
Fax (502) 564-6785

Lori H. Flanery
Secretary

SECRETARY'S ORDER 11-004

FINANCE AND ADMINISTRATION CABINET

Vendor Document Disclosure

WHEREAS, in order to promote accountability and transparency in governmental operations, the Finance and Administration Cabinet believes that a mechanism should be created which would provide for review and assistance to an Executive Branch agency if said agency cannot obtain access to documents that it deems necessary to conduct a review of the records of a private vendor that holds a contract to provide goods and/or services to the Commonwealth; and

WHEREAS, in order to promote accountability and transparency in governmental operations, the Finance and Administration Cabinet believes that a mechanism should be created which would provide for review and assistance to an Executive Branch agency if said agency cannot obtain access to documents that it deems necessary during the course of an audit, investigation or any other inquiry by an Executive Branch agency that involves the review of documents; and

WHEREAS, KRS 42.014 and KRS 12.270 authorizes the Secretary of the Finance and Administration Cabinet to establish the internal organization and assignment of functions which are not established by statute relating to the Finance and Administration Cabinet; further, KRS Chapter 45A.050 and 45A.230 authorizes the Secretary of the Finance and Administration Cabinet to procure, manage and control all supplies and services that are procured by the Commonwealth and to intervene in controversies among vendors and state agencies; and

NOW, THEREFORE, pursuant to the authority vested in me by KRS 42.014, KRS 12.270, KRS 45A.050, and 45A.230, I, Lori H. Flanery, Secretary of the Finance and Administration Cabinet, do hereby order and direct the following:

I. Upon the request of an Executive Branch agency, the Finance and Administration Cabinet ("FAC") shall formally review any dispute arising where the agency has requested documents from a private vendor that holds a state contract and the vendor has refused access to said documents under a claim that said documents are not directly pertinent or relevant to the agency's inquiry upon which the document request was predicated.

II. Upon the request of an Executive Branch agency, the FAC shall formally review any situation where the agency has requested documents that the agency deems necessary to

conduct audits, investigations or any other formal inquiry where a dispute has arisen as to what documents are necessary to conclude the inquiry.

III. Upon receipt of a request by a state agency pursuant to Sections I & II, the FAC shall consider the request from the Executive Branch agency and the position of the vendor or party opposing the disclosure of the documents, applying any and all relevant law to the facts and circumstances of the matter in controversy. After FAC's review is complete, FAC shall issue a Determination which sets out FAC's position as to what documents and/or records, if any, should be disclosed to the requesting agency. The Determination shall be issued within 30 days of receipt of the request from the agency. This time period may be extended for good cause.

IV. If the Determination concludes that documents are being wrongfully withheld by the private vendor or other party opposing the disclosure from the state agency, the private vendor shall immediately comply with the FAC's Determination. Should the private vendor or other party refuse to comply with FAC's Determination, then the FAC, in concert with the requesting agency, shall effectuate any and all options that it possesses to obtain the documents in question, including, but not limited to, jointly initiating an action in the appropriate court for relief.

V. Any provisions of any prior Order that conflicts with the provisions of this Order shall be deemed null and void.

SPECIAL NOTE FOR RECIPROCAL PREFERENCE

Reciprocal preference to be given by public agencies to resident bidders

By reference, KRS 45A.490 to 45A.494 are incorporated herein and in compliance regarding the bidders residency. Bidders who want to claim resident bidder status should complete the Affidavit for Claiming Resident Bidder Status along with their bid in the Expedite Bidding Program. Submittal of the Affidavit should be done along with the bid in Bid Express.

ASPHALT MIXTURE

Unless otherwise noted, the Department estimates the rate of application for all asphalt mixtures to be 110 lbs/sy per inch of depth.

INCIDENTAL SURFACING

The Department has included in the quantities of asphalt mixtures established in the proposal estimated quantities required for resurfacing or surfacing mailbox turnouts, farm field entrances, residential and commercial entrances, curve widening, ramp gores and tapers, and road and street approaches, as applicable. Pave these areas to the limits as shown on Standard Drawing RPM-110-06 or as directed by the Engineer. In the event signal detectors are present in the intersecting streets or roads, pave the crossroads to the right of way limit or back of the signal detector, whichever is the farthest back of the mainline. Surface or resurface these areas as directed by the Engineer. The Department will not measure placing and compacting for separate payment but shall be incidental to the Contract unit price for the asphalt mixtures.

JPC RIDE QUALITY

The Department will apply JPC Ride Quality requirements on this project in accordance with Section 501.03.19(B).

ASPHALT PAVEMENT RIDE QUALITY CATEGORY B

The Department will apply Pavement Rideability Requirements on this project in accordance with Section 410, Category B.

FUEL AND ASPHALT PAY ADJUSTMENT

The Department has included the Contract items Asphalt Adjustment and Fuel Adjustment for possible future payments at an established Contract unit price of $1.00. The Department will calculate actual adjustment quantities after work is completed. If existing Contract amount is insufficient to pay all items on the contract with the adjustments, the Department will establish additional monies with a change order.

OPTION A

Be advised that the Department will accept compaction of asphalt mixtures furnished for driving lanes and ramps, at 1 inch (25mm) or greater, on this project according to OPTION A in accordance with Section 402 and Section 403 of the current Standard Specifications. The Department will require joint cores as described in Section 402.03.02 for surface mixtures only. The Department will accept compaction of all other asphalt mixtures according to OPTION B.

8/1/14

KY 9, Campbell County
Item Number: 6-8101.10

SPECIAL NOTE
ALTERNATE PAVEMENT BID ADJUSTMENT

This project includes alternate bidding for asphalt or concrete pavement. There are specific items listed for each pavement type to be bid with the alternate selected by the Contractor. There is also a line item in the alternate categories for each alternate to adjust for the projected out-year life-cycle costs to the Cabinet. These line item adjustments are as follows:

Asphalt Pavement Adjustment = **$99,424**

Concrete Pavement Adjustment = **$76,101**

NOTE: The Concrete Pavement Adjustment will be the same regardless of the shoulder alternate chosen.

The amount reflective of the pavement type selected by each contractor will be added to their respective bid for comparison of the low bid. The adjustment ***shall be used only for determination of the lowest bidder*** *and* ***shall not be used to determine the final payment*** to the contractor when the project is completed.

Please note that these adjustments should not be used for the calculation of the maximum Mobilization amount and are not required to be included in the minimum Demobilization amount.

Proposal Guaranty

As a supplement to Section 102 of the Standard Specifications, it will not be necessary for the Proposal Guaranty to include an amount necessary to cover the amount of the bid adjustment.

Electric Bid Item Descriptions

And

Specifications

Pull Boxes 3 x 5 are to be supplied and installed by the contractor according to Duke Drawing No. 16005. Manufacturer and type (or equivalent) to be used. Paid EACH (EA) when conduit is connected, box set and ready for conductor.

4 inch Service Conduits are to be supplied and installed by the contractor according to underground electric code requirements and installation requirements as set forth in Red Book drawings 670 & 674. (Included in specifications below.)

6 inch 13KV Conduits are to be supplied and installed by the contractor according to underground electric code requirements and installation requirements as set forth in Red Book drawings 670 & 674. (Included in specifications below.)

4 inch Bends – 36" radius/90 deg. are to be supplied and installed by the contractor according to underground electric code requirements and installation requirements as set forth in Red Book drawings 670 & 674. (Included in specifications below.)

6 inch Bends – 36" radius/90 deg. are to be supplied and installed by the contractor according to underground electric code requirements and installation requirements as set forth in Red Book drawings 670 & 674. (Included in specifications below.)

Labor to Install Transformer Box Pad is a Lump Sum item for labor only to install pad according to Red Book Drawing 671. (Included in specifications below)

Flowable Fill See KYDOH Standard Specifications For Road and Bridge Construction.

Concrete – Class A See KYDOH Standard Specifications For Road and Bridge Construction.

Manhole Type J (Electrical) See Latest Edition of Duke Energy Red Book

SPECIFICATIONS AND GENERAL NOTES

Additional specification details can be found in the latest edition of Duke Energy Redbook Drawings: # 670, 671, 672, 673, 674, 675, 676, 677 and 678.

Pull Boxes will be supplied by the contractor. They are to be Polymer Concrete Pull Boxes and meet Duke Specifications as shown on the attached Drawing No. 16005 and Catalog Item Detail or an EQUIVILENT product meeting the same specifications. The boxes are to be installed according to Duke Specifications on Drawing No. 16005. The lid of the Pull Box MUST be set at the same elevation as the final grade of the finished sidewalk.

The road contractor will supply all 4" service conduits, all 6" 13 KV conduits and all necessary 4" and 6" bends, spacers, connections to pull boxes and backfill material and installation to meet company specifications.

All 4"conduits shall be installed according to Red Book drawings # 670 & 674 in the locations as shown on the KY 9 Electric Utilities Plans.

All 6"conduits shall be installed according to Red Book drawings # 670 & 674 in the locations as shown on the KY 9 Electric Utilities Plans.

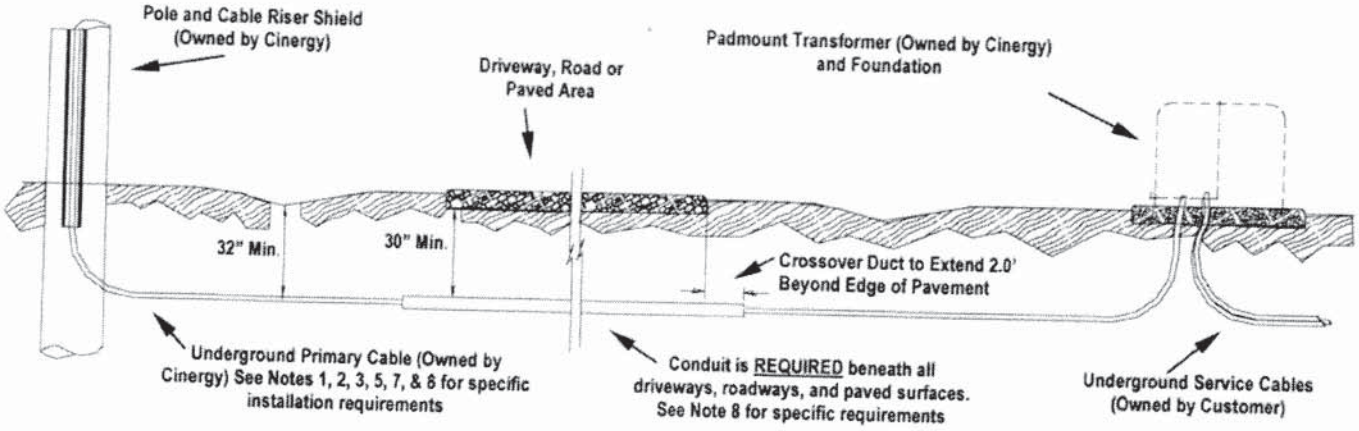
The duct systems crossing 12th Street at locations shown on the Electric & Insight Relocation Plans include ducts for Electric and Insight per plan and are to be **Concrete Encased.**

The Transformer Box Pad will be supplied by Duke Energy and installed by the road contractor according to Red Book drawing # 671. The contractor is to supply all materials and excavation labor necessary to install the box pad. The contractor is responsible for all site work preparation per specifications including excavation, backfilling, installation of conduit and accessories, form work, pouring and finishing of the concrete.
Exact location of the box pad to be determined by Duke Energy.
Transformer will be supplied and installed by Duke Energy.

The contractor shall store all PVC material in a clean, dry and shaded environment. Conduit lengths shall be stored with intermediate support as required to maintain the conduit in a straight manner. The contractor shall use all reasonable efforts to maintain the conduit free of all foreign material. The contractor shall handle the conduit so that impact or shock damage does not occur and to ensure its integrity without cracks or ships. Conduit cement shall be applied in accord with the manufacture's recommendations. Conduit and fittings to be mated shall be at essentially the same temperature. Dirt and foreign material shall be removed with a clean, dry cloth. Spacers shall be installed on the trench bottom at eight (8) foot intervals.

The contractor shall provide Duke with drawings detailing location and configuration of the installed facilities, as well as all existing underground installations encountered.
Duke has detailed the location of the new duct systems as shown on the enclosed utility plan sheets, but due to the number of other existing and proposed utilities in this same area, records must be kept of any deviations made to the original design.
Any changes or deviations made to any of the duct systems must first be approved by the utility company and the KYTC Resident Engineer or his representative.

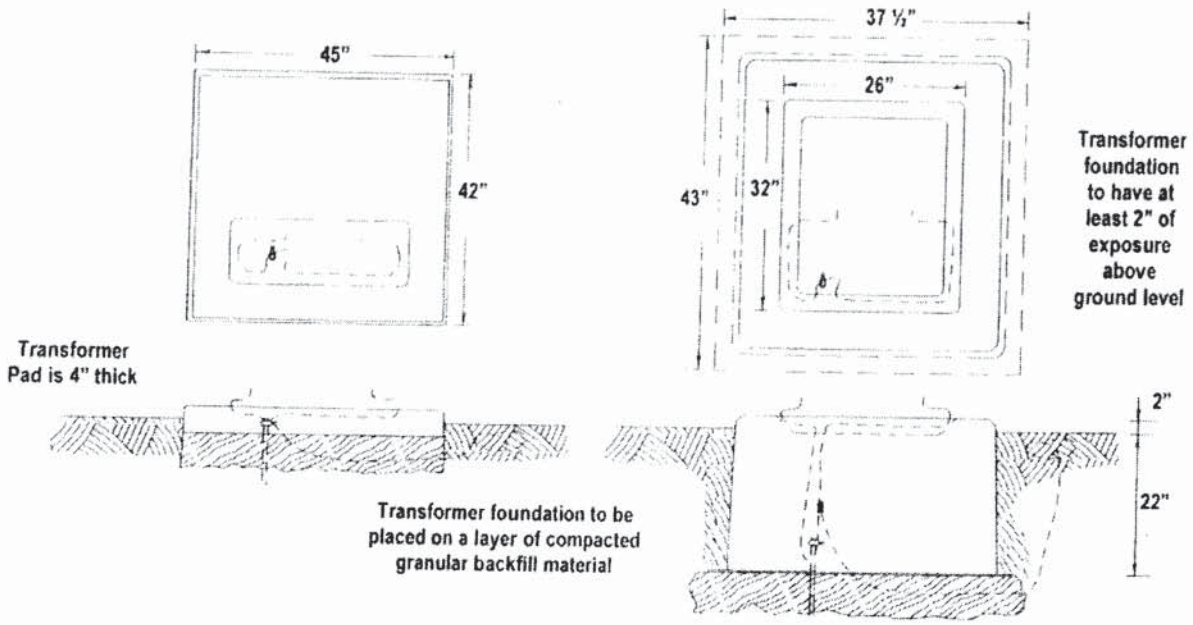
Drawing 670
Service Requirements for Single Phase Underground Primary Electric Service From An Overhead Distribution Line



SERVICE REQUIREMENTS:

1. *Easements:* The customer shall provide an easement 15 feet in width for the underground electric system. The easement shall be cleared of all obstructions that may interfere with underground cable installation, operation, and maintenance. The easement shall be kept clear of vegetation, buildings, and obstructions.
2. *Routing:* Cinergy shall be responsible for determining the final routing for underground primary cables. The cable route must be accessible for maintenance along its entire length.
3. *Use by Others:* The underground trench containing the electric cables is for the sole use of Cinergy. Other utilities may be allowed in the trench with the express permission of Cinergy.
4. *Acceptance:* The company reserves the right to refuse service to new installations that do not meet Cinergy requirements and may elect to remove existing service cables if the customer fails to provide adequate maintenance to customer owned facilities
5. *Materials & Labor:* The customer shall provide all materials and excavation labor necessary to install the underground primary cable system. This includes trenching, backfilling, leveling the transformer pad location, installation of conduit and conduit accessories, installation of special backfill, etc.
6. *Trench Dimensions and Clearances*: The primary cable trench shall be a minimum of 32" deep and 6" wide. The maximum depth shall be no more than 36". The trench must be at least 3.0 feet away from adjacent gas pipes or water lines. It shall be at least 1.0 foot away from all other underground utilities including telephone, cable TV, lawn watering systems, etc. The surface grade over the trench shall not be changed in any way that reduces or increases the depth of burial.
7. *Conduit:*: When deemed necessary by the Cinergy Representative, the customer shall install conduit or select backfill to protect Cinergy facilities from damage by rocks or other hazards. If conduit is installed for the primary system, it shall be owned and maintained by the customer. Select backfill materials include unwashed sand, bank run gravel with stones less than 1" in diameter, etc.
8. If the underground primary system must pass beneath paved areas, the customer shall install a conduit across the paved area. The conduit shall have at least 30 inches of cover. It must be at least 3 inches in diameter. It must extend at least 2.0 feet beyond the edge of pavement. The conduit shall be made from Polyvinyl Chloride (PVC) and suitable for use with underground electric distribution cables rated at 90°C. It shall be suitable for direct burial or concrete encasement. A UL listing and a schedule 40 (Sch. 40) rating are adequate for this purpose.
9. *Secondary Service*: The customer shall own and maintain the underground service conductors from the transformer to the electric meter. Service conductors must be a minimum of 24" deep. Service conductors shall be installed at the proper depth (NEC) to within 2.0 feet of the transformer pad by the customer. Sufficient cable length will be provided so that the cable ends will be approximately 5 ft above the transformer pad when the cables are installed into the pad by Cinergy. Cinergy will extend the cables into the transformer pad and make final connections upon receipt of proper inspection releases.

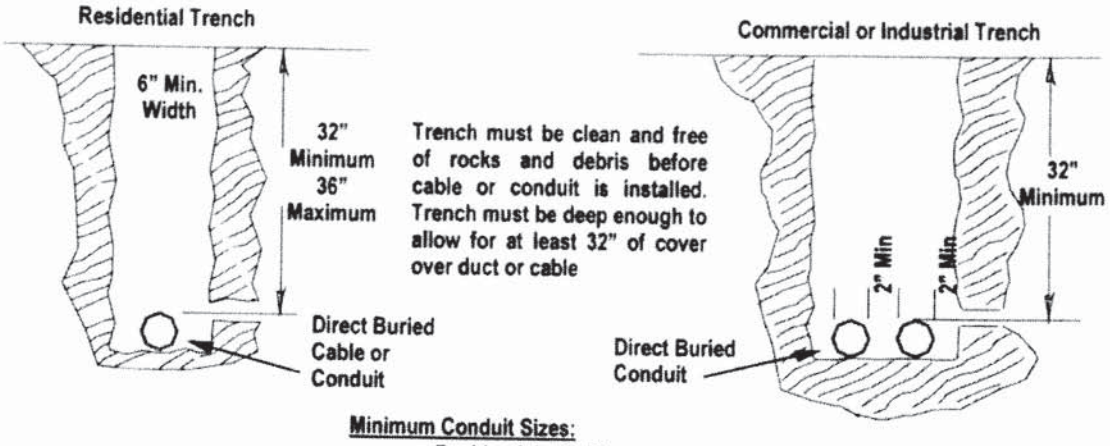
Drawing 671
Installation Requirements for Single-Phase Padmount Transformer Foundations



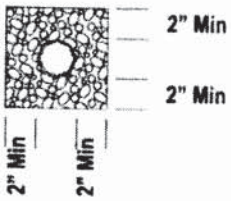
Installation Requirements:

1. *Acceptance:* The company reserves the right to refuse service to new installations that do not meet Cinergy requirements and may elect to remove existing service cables if the customer fails to provide adequate maintenance to customer owned facilities
2. *Location:* Cinergy shall be responsible for determining the final location for the transformer pad. The customer shall provide a level location for a padmounted transformer installation as directed by the Company. The transformer must be located within 25 feet of and adjacent to a driveway or other area accessible to Cinergy construction and maintenance equipment. The transformer (or transformer foundation) must be at least 10.0 feet from combustible walls, window, or ventilation openings and 20 feet from any doorway in a building. Landscaping must be kept a minimum of 3.0 feet the sides or back of the transformer (or transformer pad). There must be a clearance of at least 10.0 feet from any obstruction to the front ot the transformer.
3. *Installation:* The customer is responsible for installing the transformer foundation (pad or boxpad) in accordance with Cinergy requirements. Normally, transformers will be mounted on a flat, polymer concrete pad or on a pad incorporated into the base of the padmount transformer (RanchRunner®). If conduit is used for the primary cable installation or in areas with 19.9kV primary voltage, a boxpad foundation is to be used. Cinergy provides the flat pads or boxpads. The customer should consider frost action, drainage and local soil conditions when locating the transformer foundation. Specific requirements include:
   - The transformer pad or boxpad shall be installed on a bed of granular fill materials that has been compacted prior to placing the foundation.
   - The surface of the transformer pad shall be flat and level within 1.0" in all directions.
   - Customer installed conduits (primary or secondary) shall be extend a minimum of 1" above the surface of the flat pad. They shall terminate no more than 6" and no less than 3" above the bottom of the boxpad.
   - Customer installed service cables shall extend 6.0 feet above the top surface of the foundation.
4. *Materials & Labor:* Cinergy will provide the pad or boxpad, depending on specific job requirements. The customer shall provide all materials and excavation labor necessary to install the transformer pad or boxpad. This includes: excavation, backfilling, installation of conduit and conduit accessories, building forms, pouring and finishing concrete, etc.

Drawing 674
Construction Details for Customer Installed Electric Facilities



Trench must be clean and free of rocks and debris before cable or conduit is installed. Trench must be deep enough to allow for at least 32" of cover over duct or cable

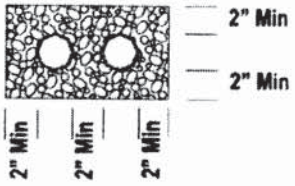


Minimum Conduit Sizes:

- Residential – 3" ID
- Commercial – 4" ID for URD Cables
- Commercial – 6" ID for Power Cables

All conduit must be UL Listed and have a Schedule 40 (Sch.40) Rating. A 90°C temperature rating is required.

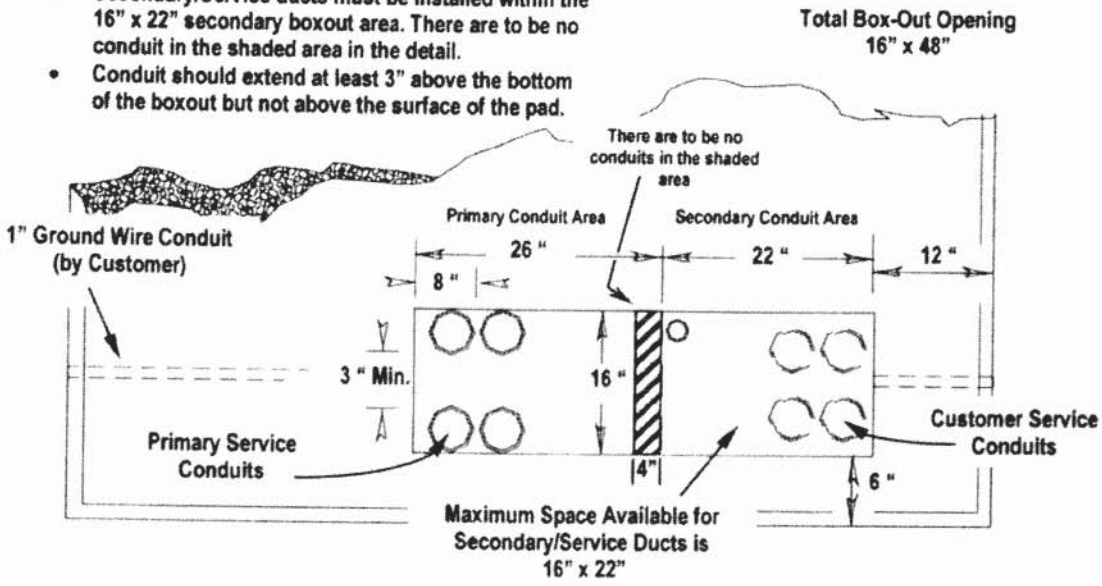
When conduit is concrete encased, the conduit must be covered by a minimum of 2" of concrete on all sides



Three-Phase Transformer Boxout Details

Customer to install conduit into pad boxout as shown.

- Primary conduit must be installed as shown.
- Secondary/Service ducts must be installed within the 16" x 22" secondary boxout area. There are to be no conduit in the shaded area in the detail.
- Conduit should extend at least 3" above the bottom of the boxout but not above the surface of the pad.



September 17, 2007

Drawing 674
Construction Details for Customer Installed Electric Facilities

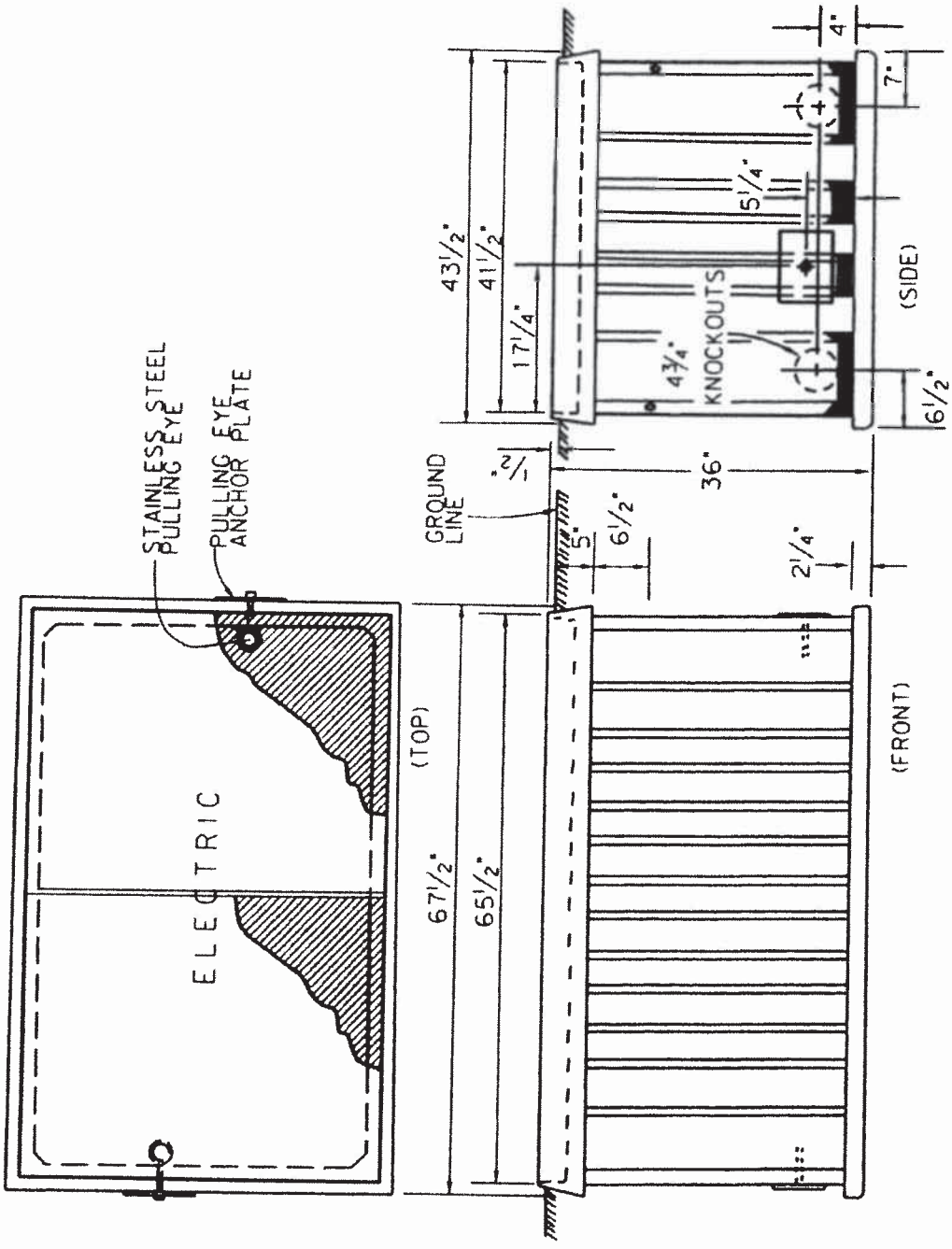
Revision Log:

9/17/02 – Eliminate 5" duct size in Min Conduit Size note (WHC)
9/17/02 – Add Dimension to "no-Duct" zone in bottom detail (WHC)

DRAWING No. 16005

POLYMER CONCRETE SPLICE BOX
(3' X 5' X 3' DEEP)
(STOCK #0000830011)

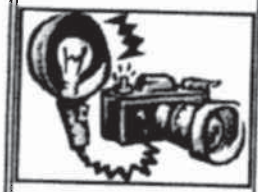
Manufacturer	Part Number
CDR SYSTEMS	PA12-3660-36B
QUAZITE	LG3660-DA36/LG3660-HA17



APP'D STD'S COMM. 6-6-90

3-26-90 REVISED

3ill\drawings\16005.dgn 6/18/2007 9:12:20 AM

Short Text:	BOX, ELECTRICAL, SERVICE, 3FT X 5FT X 36, POLYMER CONCRETE, URD SPLICING		
	Catalog ID: 0000830011 0	Material Status: READY	
	Unit of Measure: EA		
	Item Type: MATERIAL & SUPPLIES	Capital Ind: M&S Material	
	Standard Package: 1	Creation Date: 6/1/1998	
	Category: ELECTRICAL		

Accounting Information

Business Unit:	Operating Unit:	Resp Center:	Account:	Process:	Project:
75115	PD03	S839	0154100		

Name: BOX Type: ELECTRICAL

Characteristic	Value	UOM
TYPE	SERVICE	
SIZE	3FT X 5FT X 36 DEPTH	
MATERIAL	POLYMER CONCRETE	
CONSTRUCTION	URD SPLICING	

Manufacturer	Model	Part Number	Status	MSDS Number
CDR SYSTEMS CORPORATION		PA12-3660-36B	ACTIVE	
QUAZITE		LG3660-DA36/LG3660-HA17	ACTIVE	

Cross Ref Number

66BO0215	EOD

Related Items

Special Instructions

Additional Comments

Purchase Order Text	INCLUDING 2 PIECE LID AND INTEGRAL BOTTOMRATED FOR FULL TRAFFIC HEAVY DUTY APPLICATIONS (NOT FORROADWAY USE),WITH PULLING EYES INSTALLED IN EACH END AND2 KNOCK OUTS IN EACH END. LID IS TO BE PRINTED WITHTHE LOGO ELECTRIC
Additional Comments	

Subject: Conduit Bend

BEND, CONDUIT, PANDC, DB-60, 4IN, PVC, 90 DEG, 36IN RAD, BELLED END, STD PKG/1

Catalog ID:	0000906348 0	Material Status:	READY
Unit of Measure:	EA	Unit Cost:	
Item Type:	MATERIAL & SUPPLIES	Capital Ind:	M&S Material
Standard Package:	5	Creation Date:	6/1/1998
Category:	CONDUIT/CONDUIT FITTINGS		

Accounting Information

Business Unit:	Operating Unit:	Resp Center:	Account:	Process:	Project:
75115	PD03	S839	0154100		

Name: BEND Type: CONDUIT

Characteristic	Value	UOM
TYPE	PANDC, DB-60	
SIZE	4IN	
MATERIAL	PVC	
DEGREE	90	DEG
RATING		
RADIUS	36IN	RAD
CONSTRUCTION	BELLED END, STD PKG/1	

Manufacturer	Model	Part Number	Status	MSDS Number
CAN TEX		5123876	ACTIVE	
CARLON		PF9FN	ACTIVE	
OLIN CORPORATION/CHEMICAL		DX80110	ACTIVE	

Cross Ref Number

66BE0160	EOD	RETAIL T&D

Telephone Bid Item Descriptions

And

Specifications

4 inch Duct and Connections. Road contractor will supply and install all duct, bends, fittings and spacers for Cincinnati Bell per plan as shown on the **KY 9 Underground Electric Plan and Profile Sheets**. Typical trench details are shown on the profile sheets.

The following details for installation were also provided by Cincinnati Bell:

- All work performed by the road contractor will be coordinated with CBT inspector Breck Cowan (513)702-1040 **before** any work is performed.
- Road contractor will be responsible for placing all conduits as per CBT specifications.
- Road contractor will place 4" ducts as shown with concrete encasement.
- See typical trench details are shown on the profile sheets.
- Backfill will be controlled density fill (HAMCIN: CLSM-CDF) or as specified by a KYTC representative.
- 1" spacers will be installed every 10' for duct placement.
- Sweeping bends must be used.

Any changes or deviations made to any of the Cincinnati Bell duct systems must first be approved by the utility company and the KYTC Resident Engineer or his representative.

Time Warner Cable Bid Item Descriptions

And

Specifications

Pull Boxes 2 x 3 are to be supplied and installed by the contractor. A typical Quazite Manufactured pull box is shown in the specifications as an example only. The contractor may use any pull box that meets or exceeds these specifications. Paid EACH (EA) when conduit is connected, box set and ready for conductor.

4 inch Conduit for Trunk & Distribution are to be supplied by the contractor. A typical type of duct specification is included in the proposal as an example only. The contractor may use any manufactured duct that meets or exceeds the specifications set forth by the enclosed typical.

4 inch 36" radius/90 deg. Elbows are to be supplied by the contractor. A typical type of elbow specification is included in the proposal as an example only. The contractor may use any manufactured elbow that meets or exceeds the specifications set forth by the enclosed typical.

4 inch PVC couplings are to be supplied by the contractor. A typical type of coupling specification is included in the proposal as an example only. The contractor may use any manufactured coupling that meets or exceeds the specifications set forth by the enclosed example.

SPECIFICATIONS AND GENERAL NOTES

The KY 9 Electric Utilities Plans, sheet U1 thru U7 show the locations and profiles for duct systems crossing KY 9 for Electric, Telephone and Time Warner. All ducts are to be **Concrete Encased.**

Pull Boxes will be supplied by the contractor. They are to meet or exceed the specifications of the typical Quazite pull box included in this proposal. The contractor may use any pull box that is of the same type and meets or exceeds the same specifications as the Quazite typical.

The pull boxes are to be installed in the new sidewalk near the electric pull boxes. Exact location will be determined by a Time Warner Cable representative.
The lid of the Pull Box MUST be set at the same elevation as the final grade of the finished sidewalk.

The road contractor will supply and install all 4 inch Conduit for Trunk & Distribution, 4 inch 36" radius/90 deg. Elbows and 4 inch PVC couplings to pull boxes. The Time Warner duct system will be installed in the same trench as Duke underground electric.

The contractor shall store all PVC material in a clean, dry and shaded environment. Conduit lengths shall be stored with intermediate support as required to maintain the conduit in a straight manner. The contractor shall use all reasonable efforts to maintain the conduit free of all foreign material. The contractor shall handle the conduit so that impact or shock damage does not occur and to ensure its integrity without cracks or ships. Conduit cement shall be applied in accord with the manufacture's recommendations. Conduit and fittings to be mated shall be at essentially the same temperature. Dirt and foreign material shall be removed with a clean, dry cloth. Spacers shall be installed on the trench bottom at eight (8) foot intervals.

Any changes or deviations made to any of the duct systems must first be approved by the utility company and the KYTC Resident Engineer or his representative.

Quazite

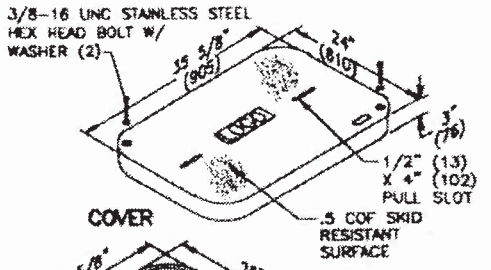
SPECIFICATIONS/DATA

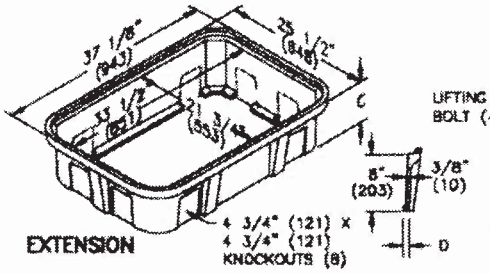
24" x 36" PG Style (Staokable) Assembly

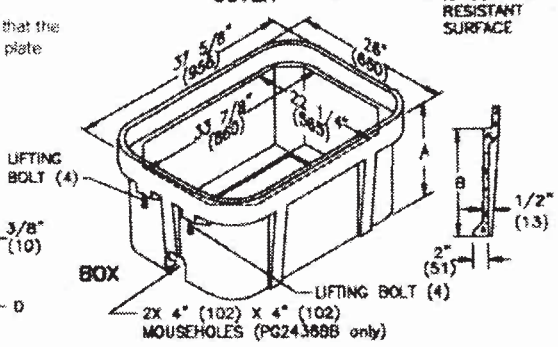
Covers (Blank unless logo is specified)

	DESCRIPTION	PART NO.	WEIGHT #	DESIGN/TEST LOAD #	ANSI TIER
S	W/2 Bolts	PG2436CA00	100 (45.4 kg)	8,000 / 12,000	8
S	Gasketed w/2 Bolts	PG2436CG00	100 (45.4 kg)	8,000 / 12,000	8
S	No Bolts	PG2436WA00	100 (45.4 kg)	8,000 / 12,000	8
S	Heavy Duty w/2 Bolts	PG2436HA00	115 (52.2 kg)	15,000 / 22,500	15
S	Gasketed Heavy Duty w/2 Bolts	PG2436HG00	115 (52.2 kg)	15,000 / 22,500	15
	Extra Heavy Duty w/2 Bolts	PG2436HH00	122 (55.2 kg)	22,500 / 33,750	15*

- Covers with meter lids available upon request
- Gasketed covers and bolt grommets must be used with a gasketed box. Gaskets reduce the inflow of fluids but do not make the enclosure water tight
- *Loadings for HH covers comply with all test provisions of ANSI/SCTE 77 except that the vertical design load is 22,500 lbs. with a test load of 33,750 lbs. over a 10" x 20" plate







Boxes (Stackable with self-aligning, replaceable EZ-Nut) *24", 30" & 42" deep boxes must be used as bottom of any stack

	DESCRIPTION	PART NO.	WEIGHT #	DIMENSION A	DIMENSION B	DESIGN/TEST LOAD #	ANSI TIER
S	Open Bottom	PG2436BA18	141 (64.0 kg)	18" (457 mm)	15" (381 mm)	22,500 / 33,750	15**
	*	PG2436BA24	180 (81.8 kg)	24" (610 mm)	21" (533 mm)	22,500 / 33,750	15**
	*	PG2436BA30	196 (88.9 kg)	30" (762 mm)	27" (686 mm)	22,500 / 33,750	15**
	*	PG2436BA42	265 (120.0 kg)	42" (1067 mm)	39" (991 mm)	22,500 / 33,750	15**
S	Open Bottom w/ Gasket	PG2436BG18	141 (64.0 kg)	18" (457 mm)	15" (381 mm)	22,500 / 33,750	15**
	*	PG2436BG24	180 (81.5 kg)	24" (610 mm)	21" (533 mm)	22,500 / 33,750	15**
	*	PG2436BG30	196 (88.9 kg)	30" (762 mm)	27" (686 mm)	22,500 / 33,750	15**
	*	PG2436BG42	265 (120.0 kg)	42" (1067 mm)	39" (991 mm)	22,500 / 33,750	15**
S	Open Bottom w/ 2 Mouseholes	PG2436BB18	139 (63.1 kg)	18" (457 mm)	15" (381 mm)	22,500 / 33,750	15**
	*	PG2436BB24	178 (80.7 kg)	24" (610 mm)	21" (533 mm)	22,500 / 33,750	15**
	*	PG2436BB30	194 (88.0 kg)	30" (762 mm)	27" (686 mm)	22,500 / 33,750	15**
	*	PG2436BB42*	263 (119.3 kg)	42" (1067 mm)	39" (991 mm)	22,500 / 33,750	15**
S	Solid Bottom	PG2436DA18	181 (82.1 kg)	18 1/2" (470 mm)	15" (381 mm)	22,500 / 33,750	15**
	*	PG2436DA24	228 (103.4 kg)	24 1/2" (622 mm)	21" (533 mm)	22,500 / 33,750	15**
	*	PG2436DA30	238 (107.9 kg)	30 1/2" (775 mm)	27" (686 mm)	22,500 / 33,750	15**
	*	PG2436DA42	293 (133.0 kg)	42 1/2" (1080 mm)	39" (991 mm)	22,500 / 33,750	15**
S	Solid Bottom w/ Gasket	PG2436DG18	181 (82.1 kg)	18 1/2" (470 mm)	15" (381 mm)	22,500 / 33,750	15**
	*	PG2436DG24	228 (103.4 kg)	24 1/2" (622 mm)	21" (533 mm)	22,500 / 33,750	15**
	*	PG2436DG30	238 (107.0 kg)	30 1/2" (775 mm)	27" (686 mm)	22,500 / 33,750	15**
	*	PG2436DG42	293 (133.0 kg)	42 1/2" (1080 mm)	39" (991 mm)	22,500 / 33,750	15**

* PG 2436BB42 is not UL Listed

** Loadings comply with ANSI/SCTE 77. These boxes meet and exceed ANSI Tier 15 test provisions

Extensions (For use under 18" deep boxes only, one per box. For grade adjustable extension see page 41.)

DESCRIPTION	PART NO.	WEIGHT #	DIMENSION C	DIMENSION D	DESIGN/TEST LOAD #	ANSI TIER
Open Bottom	PG2436EA08	57 (25.9 kg)	8 3/4" (222 mm)	1" (25 mm)	22,500 / 33,750	15*
Solid Bottom	PG2436RA08	95 (43.1 kg)	9 1/4" (235 mm)	N/A	22,500 / 33,750	15*

* Loadings comply with ANSI/SCTE 77. These extensions meet and exceed ANSI Tier 15 test provisions

Dimensions & weights in parentheses are metric equivalent

ENCLOSURE DRAWINGS

Rigid Schedule 40 & Schedule 80 PVC Conduit

- UL Listed
- NEMA TC2
- Military Specification - WC1094A
- Federal Specification - WC1094A
- Corp. of Engineers Specification - CE 303:01
- Sunlight Resistant
- Rated for use with 90°conductors

Schedule 40 Heavy Wall in 10' or 20' Lengths

Scepter Rigid Heavy Wall Conduit is listed with Underwriters Laboratories Inc. Installation is covered in the 2002 National Electrical Code Article 352, for use above and below ground encased in concrete, direct burial, exposed and concealed spaces.

Nominal Size (in.)	10' Product Code	20' Product Code	OD (inches)	ID (inches)	Min. Wall (inches)	Weight lbs./100'	Standard 10' ft./crate
1/2	032405	032406	0.840	0.622	0.109	15	6,000
3/4	032407	032408	1.050	0.824	0.113	21	4,400
1	032410	032411	1.315	1.049	0.133	31	3,600
1 1/4	032412	032414	1.660	1.380	0.140	42	3,300
1 1/2	032415	032416	1.900	1.610	0.145	53	2,250
2	032420	032421	2.375	2.067	0.154	71	1,400
2 1/2	032425	032426	2.875	2.469	0.203	112	930
3	032430	032431	3.500	3.068	0.216	166	880
3 1/2	032435	032436	4.000	3.548	0.226	200	630
4	032440	032441	4.500	4.026	0.237	236	570
5	032450	032451	5.563	5.047	0.258	321	380
6	032460	032461	6.625	6.065	0.280	417	260

Schedule 80 Extra Heavy Wall in 10' or 20' Lengths

Scepter Rigid Extra Heavy Wall Conduit is for use above ground where subject to severe physical abuse, pole risers, bridge crossings and other similar conditions.

Nominal Size (in.)	10' Product Code	20' Product Code	OD (inches)	ID (inches)	Min. Wall (inches)	Weight lbs./100'	Standard 10' ft./crate
1/2	032505	032506	0.840	0.546	0.147	21	6,000
3/4	032507	032508	1.050	0.724	0.154	28	4,400
1	032510	032511	1.315	0.957	0.179	41	3,600
1 1/4	032512	032514	1.660	1.278	0.191	57	3,300
1 1/2	032515	032516	1.900	1.500	0.200	70	2,250
2	032520	032521	2.375	1.939	0.218	96	1,400
2 1/2	032525	032526	2.875	2.323	0.276	146	930
3	032530	032531	3.500	2.900	0.300	195	880
4	032540	032541	4.500	3.826	0.337	286	570
5	032550	032551	5.563	4.813	0.375	397	380
6	032560	032561	6.625	5.761	0.432	546	260

Weight Comparison of Scepter Rigid PVC Conduit

lbs./100 ft.

Nominal Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"
Rigid PVC	15	21	31	42	53	71	112	166	200	236	321	417
Aluminum	28	27	53	70	86	116	183	239	288	340	465	613
Rigid Steel	79	105	153	201	249	334	527	690	831	982	1,334	1,771

STANDARDS & SHORT FORM SPECIFICATIONS

Listings

Scepter Rigid PVC Conduit conforms to these standards:

CSA C22.2 No. 211.2
CSA C22.2 No. 211.0

UL Listed-UL651
Sunlight Resistant
Rated for use with 90°C conductors

NEMA TC2
Corps. of Engineers Spec.
CE 303:01
Military Spec. Federal Spec.
WC 1094A

Scepter Rigid PVC boxes and fittings conform to these standards.

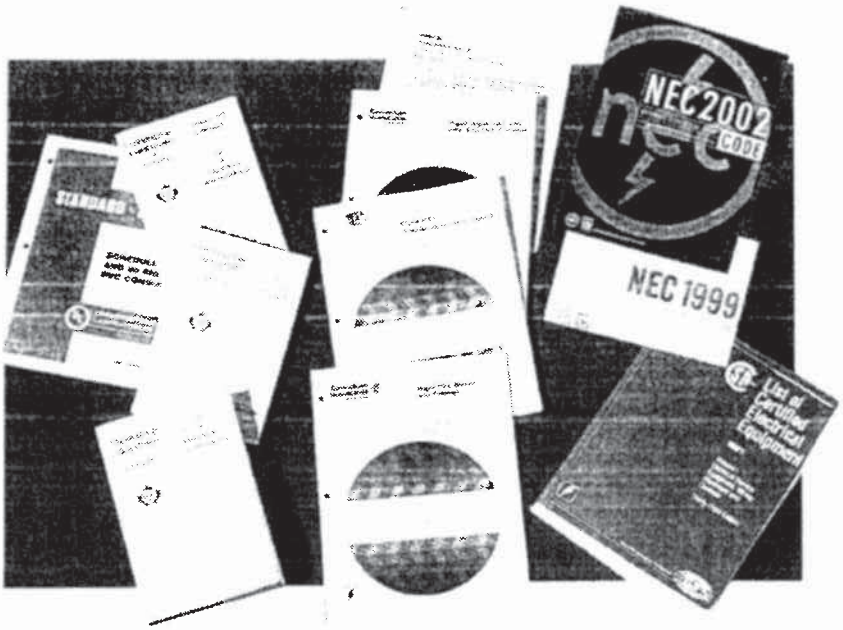
C-22.2 No. 85

UL Listed
UL514B - UL514C

NRTL/C

NRTL/C indicator adjacent to the CSA mark signifies that the product has been evaluated to the applicable ANSI/UL and CSA Standards for use in the U.S. and Canada.

NRTL, Nationally Recognized Testing Laboratory, is a designation granted by the U.S. Occupational Safety and Health Administration (OSHA) to laboratories which have been recognized to perform certification to U.S. Standards.



Approvals

Canadian Electrical Code, Part 1
Rules 12-1100 – 12-1122

National Electrical Code
NEC 1999 Article 347
NEC 2002 Article 352

Short Form Specifications

All wiring shall be installed in Rigid PVC conduit and secured to PVC boxes and cabinets by means of proper fittings. All boxes, access fittings and covers shall be furnished with threaded brass inserts, brass screws and PVC gaskets.

Rigid PVC fittings and junction boxes shall be used for all outlets, pull boxes and junction points. All PVC junction boxes shall be NEMA 1, 2, 3, 4, 4X, 12 and 13 rated and UL Listed for wet locations.

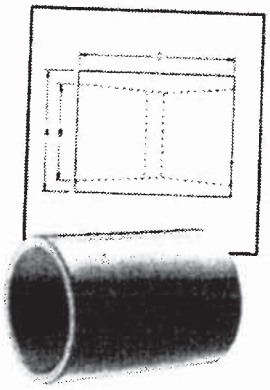
Exposed conduit shall be securely held in place by suitable hangers or straps with the maximum spacing of points for supports not exceeding those specified in the CEC or NEC. Except when embedded in concrete, rigid conduit pipe shall not be clamped tightly. It shall be supported in such a manner as to permit adequate linear movement, allowing for expansion and contraction of conduit due to temperature change. Where a length is expected to be 1/4" or greater in a straight line between securely mounted items, rigid PVC expansion joints shall be installed in accordance with the manufacturer's recommendations.

Proper care shall be taken when field bending, to maintain the internal diameter and wall thickness of the conduit.

The contractor shall furnish and install Scepter Rigid PVC conduit pipe and fittings made by IPEX. Where engineer's specifications indicate Scepter products or equivalent, the equivalent shall be UL certified and accepted by the National Electrical Code. Due to broad manufacturing tolerances, all pipe and fitting products shall be of the same manufacturer.

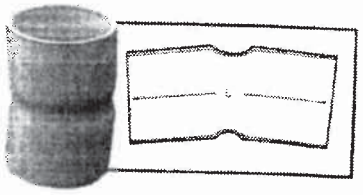
Couplings

Size (inches)	Part Number	Product Code	A (inches)	B (inches)	C (inches)
1/2	EC10	068000	1.060	0.844	1.400
3/4	EC15	068001	1.310	1.056	1.640
1	EC20	077003	1.590	1.315	2.031
1 1/4	EC25	077004	2.000	1.660	2.156
1 1/2	EC30	077005	2.230	1.900	2.281
2	EC35	077006	2.720	2.375	2.406
2 1/2	EC40	077007	3.320	2.875	3.187
3	EC45	077008	4.000	3.500	3.437
3 1/2	EC50	077009	4.500	4.000	3.625
4	EC55	077010	5.000	4.500	3.750
5	EC60	077011	6.120	5.563	4.187
6	EC65	077012	7.370	6.625	4.562



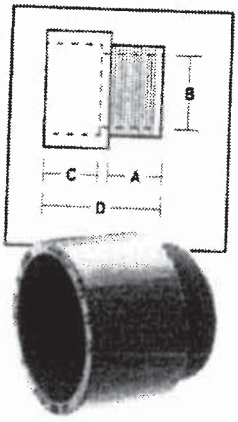
5° Couplings

Size (inches)	Part Number	Product Code	L (inches)
2	5EC35	077100	4.0
2 1/2	5EC40	077101	5.5
3	5EC45	077103	6.0
3 1/2	5EC50	077102	7.0
4	5EC55	077104	7.0
5	5EC60	077105	7.5
6	5EC65	077106	11.0



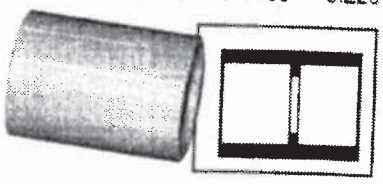
Terminal Adapters

Size (inches)	Part Number	Product Code	A (inches)	B (inches)	C (inches)	D (inches)
1/2	TA10	077021	0.700	0.591	0.750	1.550
3/4	TA15	077022	0.675	0.790	1.000	1.750
1	TA20	077023	0.625	1.000	1.115	1.860
1 1/4	TA25	077024	0.640	1.311	1.300	2.125
1 1/2	TA30	077025	0.725	1.530	1.425	2.250
2	TA35	077026	0.800	1.970	1.150	2.100
2 1/2	TA40	077027	0.800	2.346	1.900	2.930
3	TA45	077028	0.815	2.915	2.000	3.055
3 1/2	TA50	077029	1.000	3.385	1.715	3.055
4	TA55	077030	0.815	3.850	1.990	3.215
5	TA60	077031	1.725	5.015	2.000	5.985
6	TA65	077032	1.875	6.025	2.130	6.500



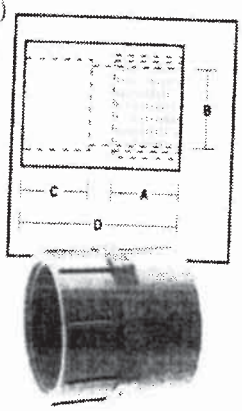
Long Line Couplings

Size (inches)	Part Number	Product Code	A (inches)
1 1/2	LLC30	077192	3.175
2	LLC35	077193	3.675
2 1/2	LLC40	077194	4.280
3	LLC45	077195	4.800
4	LLC55	077196	6.200
5	LLC60	077197	8.220
6	LLC65	077198	8.220



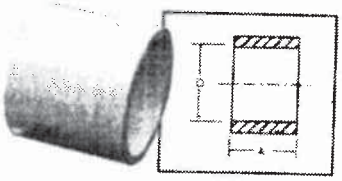
Female Adapters

Size (inches)	Part Number	Product Code	A (inches)	B (inches)	C (inches)	D (inches)
1/2	FA10	077041	0.800	0.620	0.825	1.725
3/4	FA15	077042	0.800	0.820	1.000	1.900
1	FA20	077043	1.000	1.065	1.200	2.300
1 1/4	FA25	077044	1.015	1.395	1.300	2.425
1 1/2	FA30	077045	1.050	1.575	1.290	2.440
2	FA35	077046	1.075	2.050	1.375	2.550
2 1/2	FA40	077047	1.675	2.470	1.985	3.760
3	FA45	077048	1.630	3.090	2.150	4.100
3 1/2	FA50	077049	1.800	3.540	2.000	3.985
4	FA55	077050	1.755	4.025	2.185	4.210
5	FA60	077051	2.065	5.035	3.000	5.240
6	FA65	077052	2.065	6.045	3.000	5.235



Repair Coupling Sleeve

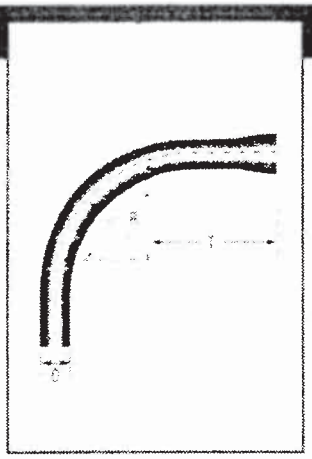
Size (in)	Part Number	Product Code	A (in)	D Min (in)	D Max (in)
1 1/2	REC30	077292	2.300	1.912	1.924
2	REC35	077293	2.405	2.367	2.399
2 1/2	REC40	077294	3.450	2.883	2.897
3	REC45	077295	3.600	3.507	3.523
4	REC55	077296	3.920	4.506	4.524
5	REC60	077297	4.275	5.583	5.603
6	REC65	077298	4.620	6.647	6.669



FITTINGS

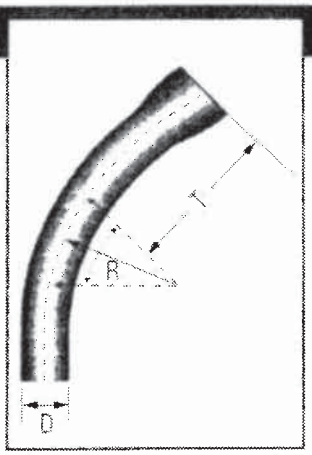
UL 90° Elbows

Size (inches)	Pro-Fit Bell End	Pro-Fit Plain End	D (inches)	T (inches)	R (inches)
1/2	068420	068580	0.840	1.500	4.00
3/4	068421	068581	1.050	1.500	4.50
1	068422	068582	1.315	1.875	5.75
1 1/4	068423	068583	1.660	2.000	7.25
1 1/2	068424	068584	1.900	2.000	8.25
2	068425	068585	2.375	2.000	9.50
2 1/2	068426	068586	2.875	3.000	10.50
3	068427	068587	3.500	3.125	13.00
3 1/2	068428	068588	4.000	3.250	15.00
4	068429	068589	4.500	3.375	16.00
5	068430	068591	5.563	3.625	24.00
6	068431	068592	6.625	3.750	30.00



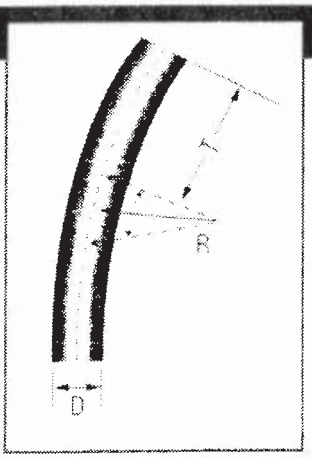
UL 45° Elbows

Size (inches)	Pro-Fit Bell End	Pro-Fit Plain End	D (inches)	T (inches)	R (inches)
1/2	068561	068600	0.840	1.500	4.00
3/4	068562	068601	1.050	1.500	4.50
1	068563	068602	1.315	1.875	5.75
1 1/4	068564	068603	1.660	2.000	7.25
1 1/2	068565	068604	1.900	2.000	8.25
2	068566	068605	2.375	2.000	9.50
2 1/2	068567	068606	2.875	3.000	10.50
3	068568	068607	3.500	3.125	13.00
3 1/2	068569	068608	4.000	3.250	15.00
4	068570	068609	4.500	3.375	16.00
5	068571	068611	5.563	3.625	24.00
6	068572	068612	6.625	3.750	30.00



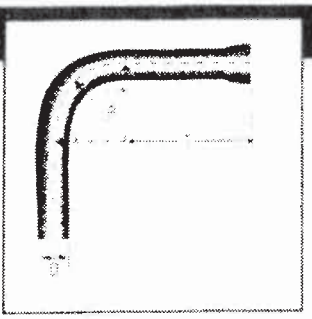
UL 30° Elbows

Size (inches)	Part Number	Product Code	D (inches)	T (inches)	R (inches)
1/2	EE1030	068620	0.840	1.500	4.00
3/4	EE1530	068621	1.050	1.500	4.50
1	EE2030	068622	1.315	1.875	5.75
1 1/4	EE2530	068623	1.660	2.000	7.25
1 1/2	EE3030	068624	1.900	2.000	8.25
2	EE3530	068625	2.375	2.000	9.50
2 1/2	EE4030	068626	2.750	3.000	10.50
3	EE4530	068627	3.500	3.125	13.00
3 1/2	EE5030	068628	4.000	3.250	15.00
4	EE5530	068629	4.500	3.375	16.00
5	EE6030	068631	5.563	3.625	24.00
6	EE6530	068632	6.625	3.750	30.00



UL Special Radius 90° Elbows

Size (inches)	Part Number	Pro-Fit Plain End	D (inches)	T (inches)	R (inches)
2	NSL 2-24	068725	2.375	2.000	24.00
2	NSL 2-36	068765	2.375	2.000	36.00
3	NSL 3-24	068727	3.500	3.125	24.00
3	NSL 3-36	068767	3.500	3.125	36.00
4	NSL 4-36	068769	4.500	3.375	36.00
4	NSL 4-48	068789	4.500	3.375	48.00
5	NSL 5-36	068771	5.563	3.625	36.00
6	NSL 6-36	068772	6.625	3.370	36.00



Nonmetallic Vapor Proof Incandescent Light Fixture

Scepter's "light that lasts" is constructed of noncorroding, nonconductive, high impact glass reinforced polyester resin. It features a one-piece fixture base with threaded hub entry offering a 15 cubic inch volume. Scepter's fixture is approved for use with 75°C wiring and rated for use with 150 Watt A21 medium base incandescent lamp. Integral molded mounting feet provide for easy installation and ensure a secure support.

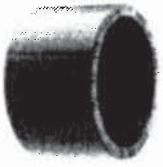
Description	Part Number	Hub	Product Code
Fixture c/w:			
Clear Glass Globe	LVPE 150-10/15	1/2" - 3/4"	077493
Heat Resistant Clear Glass Globe	LVPEHRC 150	1/2" - 3/4"	077578
Heat Resistant Red Glass Globe	LVPEHRR 150	1/2" - 3/4"	077599
Heat Resistant Blue Glass Globe	LVPEHRB 150	1/2" - 3/4"	077579
Heat Resistant Green Glass Globe	LVPEHRG 150	1/2" - 3/4"	077597
Heat Resistant Amber Glass Globe	LVPEHRA150	1/2" - 3/4"	077598
Replacement Clear Glass Globe	LGC 150		077247
Nonmetallic Clamp-on Guard	LVPUG150		077558
Clear Glass Globe & Clamp-on Guard	LVPE150-1015	1/2" - 3/4"	077402

LVPE 15/10

LVPUG 150

Reducer Bushings

Size (inches)	Part Number	Product Code
3/4 x 1/2	1805	077300
1 x 1/2	1805-1	077301
1 x 3/4	1806	077302
1 1/4 x 3/4	1807-1	077303
1 1/4 x 1	1807	077304
1 1/2 x 1	1808-1	077305
1 1/2 x 1 1/4	1808	077306
2 x 1	1809-1	077313
2 x 1 1/4	1809	077307
2 x 1 1/2	1810	077308
2 1/2 x 2	1811	077309
3 x 2	1812-1	077310
3 x 2 1/2	1812	077311
4 x 2	1813-1	077319
4 x 3	1813	077312
4 x 3 1/2	1814	077317



Threaded Reducer Bushings

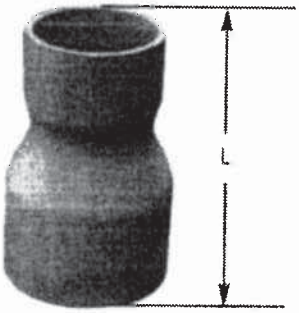
Size (inches)	Part Number	Product Code
3/4 x 1/2	1825	077314
1 x 1/2	1826	077315
1 x 3/4	1827	077316

Fabricated Swedge Reducer Couplings

(Socket x Socket)

Size (inches)	Part Number	Product Code	L (inches)
2 x 1 1/4	SW3525	077320	4
3 x 2	SW4535	077321	6
3 x 2 1/2	SW4540	077335	6.5
4 x 2	SW5535	077322	7
4 x 2 1/2	SW5540	069282	-
4 x 3	SW5545	077333	7

Other sizes available upon request.



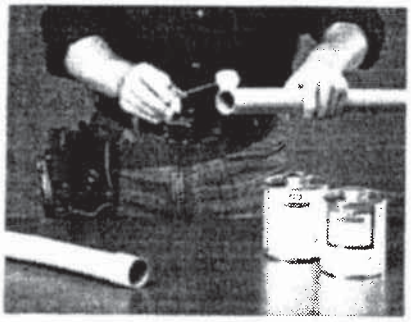
Cement

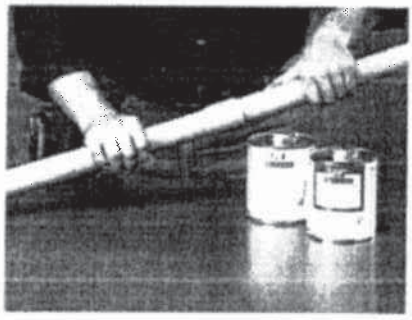
Size	Part Number	Product Code
250ml (1/2 Pint)	S100PT5	078883
500ml (Pint)	S100PT	078884
1L (Quart)	S100QT	078885
4L (Gallon)	S100GAL	078887

For information on Solvent Cementing see Page 8.

Solvent Cementing

After cutting Scepter Rigid PVC Conduit, remove all sharp edges or burrs from the inside of the conduit with a knife. Thoroughly clean the end of the pipe and inside the fitting with a rag or pipe cleaner. Check the pipe and fitting for a dry fit before cementing. Apply a generous amount of IPEX solvent cement to both surfaces; slide together and give a quarter turn to ensure the solvent is spread evenly on the material. Hold together for a few seconds until the joint is made.





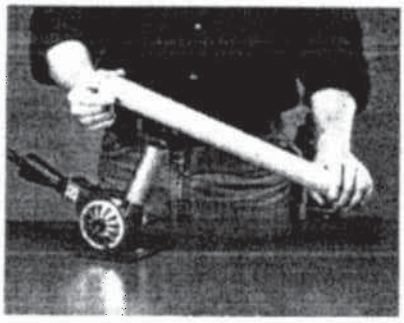
Usually the solvent-cemented joint will be strong enough to install immediately. However, in climates with low temperatures or areas with high humidity, extra time may be required before moving the pipe for permanent installation. Solvent-cemented joints appear to "set up" instantly, but will take up to 24 hours to cure properly. After this time, the solvent-cemented joint has completely cured and is waterproof. For extreme cold weather installations, the use of IPEX PVC Primer is recommended. Normal installation temperatures are between 40°F (4°C) and 110°F (43°C), however, high strength joints have been made at temperatures as low as -15°F (-26°C) with quality cements. In these extreme conditions the cement must be kept warm to prevent excessive thickening and gelation in cold weather.

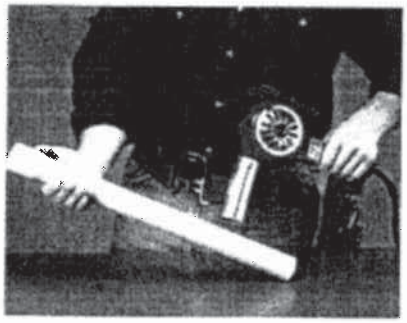
IPEX cements and primers are available in half-pint (250ml), pint (500ml), quart (1-litre) and gallon (4-litre) containers. The shelf life of conduit cement and primer is 2 years from the date of manufacture. The date code stamped on the bottom of the can is the date of manufacture, not the expiry date. Always verify that the cement is within this 2 year time frame before using.

Bending

PVC is a thermoplastic material that, when heated, becomes soft and pliable. As a result, its shape can be altered.

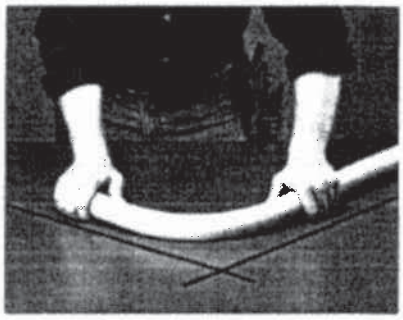
A flameless heat source is recommended to heat the pipe. AN OPEN FLAME SHOULD NOT BE USED. An electric unit or an infra-red propane unit is recommended for heating the pipe.





The necessary temperature for bending Scepter Rigid PVC pipe is 260°F (127°C). The pipe must be heated evenly over an area approximately ten times the diameter of the pipe before any attempt at bending is made. Bending the pipe when it has not been thoroughly heated will cause the pipe to "kink." With proper care and a little practice, the bend will form easily.

Cooling the pipe with cold air or water will cause "spring back." Allow a few extra degrees of overbending to compensate for this phenomenon. The maximum bending radius shall be six times the internal diameter according to the Canadian Electrical Code and the National Electrical Code.



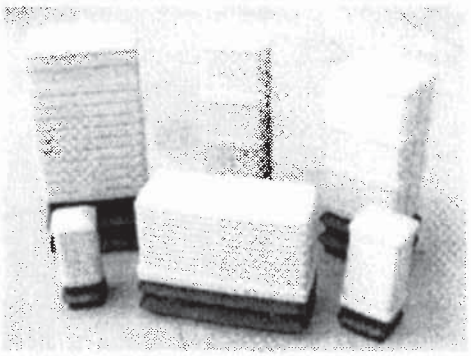
IPEX offers a large selection of Scepter Rigid PVC Schedule 40 and Schedule 80 bends. Available in plain end or one end belled, Scepter bends are readily available in standard radius or special radius configuration (18", 24", 30", 36", 48").

Scepter special radius bends are available on request in almost any degree of bend and radius of bend as a special order.

Marathon Pedestals

The Marathon Pedestals feature both covered and non-louvered, square designs with rounded corners. The pedestals are molded from a modified linear low density polyethylene specifically designed to resist impact, ultraviolet degradation and environmental degradation.

Features & Benefits
- 360 degree access
- Rugged and economical
- Rectangular shape provides increased working room over comparable round pedestals
- Multiple color, lock, and bolt options
- Factory assembled with lock and stake, arrives ready to install



Manufacturer:

MARATHON

Ordering Information:

Part Number	Description	Ship Wt	Pallet Qty

P/N	Color X	Lock Type X	Bolt Type X

Example Part number
MAR600120 1 A B G

Special Note for Bridge Demolition, Renovation and Asbestos Abatement

If the project includes any bridge demolition or renovation, the successful bidder is required to notify Kentucky Division for Air Quality (KDAQ) via filing of form (DEP 7036) a minimum of 10 days prior to commencement of any bridge demolition or renovation work.

Any available information regarding possible asbestos containing materials (ACM) on or within bridges to be affected by the project has been included in the bid documents. These are to be included with the Contractor's notification filed with the KDAQ. If not included in the bid documents, the Department will provide that information to the successful bidder for inclusion in the KDAQ notice as soon as possible. If there are no documents stating otherwise, the bidders should assume there are no asbestos containing materials that will in any way affect the work.

Asbestos Inspection Report

To: Stacey Hans

CC: Scott Schurman

From: O'Dail Lawson

Date: 3/11/2013

Re: Structure on KY 9 over CSX

Project and Structure Information

Item # Contract ID - 132652

Bridge # B00033N

Description: Campbell County (KY 9) Newport to Claryville Bridge Deck Restoration & Waterproofing

Inspection Date: 2/22/2013

Field Notes

Samples Collection Location: Two samples were collected the day of the inspection. The first sample was from the structure and was collected from the 5th peir East Side. The second sample was collected at the East End joint as well. This was Asphalt Joint Compound.

Both samples were Negative for Asbestos.

Please forward this report with the 10 NOI associated with the renovation of this structure.

Microbac

Microbac Laboratories, Inc.

KENTUCKY TESTING LABORATORY DIVISION
3323 Gilmore Industrial Blvd. Louisville, KY 40213 502.962.6400 Fax: 502.962.6411
Evansville 812.464.9000 | Lexington 859.276.3506 | Paducah 270.898.3637 | Hazard 606.487.0511

Member
ACIL

Chemical, Biological, Physical, Molecular, and Toxicological Services

CERTIFICATE OF ANALYSIS

13B1385

Kentucky DOT/Div. Env.Analyses
Odail Lawson
State Office Building Annex, 200 Mero St.
Frankfort KY, 40622

Date Reported	03/08/2013
Date Due	03/05/2013
Date Received	02/22/2013
Customer #	EK047
Customer P.O.	MA 758 1100000001 1

Asbestos Analysis - FE02-019-0009-B00033N

Analysis	OOC	Qualifier	Result	Units	Min	Max	Method	Rpt Limit	Date	Time	Tech
Sample: 01 B-01 5th Pier East Side									**Sampled**	02/21/2013 @ 13:45	
Sampled By CUSTOMER											
Asbestos, Bulk							40CFR PART 763/F				
Asbestos, Chrysotile			Not Detected	%					03/05/2013	14:05	MCS
Asbestos, Amosite			Not Detected	%					03/05/2013	14:05	MCS
Asbestos, Crocidolite			Not Detected	%					03/05/2013	14:05	MCS
Asbestos, Other			Not Detected	%					03/05/2013	14:05	MCS
Cellulose			Not Detected	%					03/05/2013	14:05	MCS
Fibrous Glass			Not Detected	%					03/05/2013	14:05	MCS
Mineral Wool			Not Detected	%					03/05/2013	14:05	MCS
Other Non-Asbestos Fibers			100	%					03/05/2013	14:05	MCS
Other Matrix Materials			Not Detected	%					03/05/2013	14:05	MCS
Sample results reported on an as-received basis											
Sample: 02 B-02 Asphalt Joint Combined									**Sampled**	02/21/2013 @ 14:00	
Sampled By CUSTOMER											
Asbestos, Bulk							40CFR PART 763/F				
Asbestos, Chrysotile			Not Detected	%					03/05/2013	14:05	MCS
Asbestos, Amosite			Not Detected	%					03/05/2013	14:05	MCS
Asbestos, Crocidolite			Not Detected	%					03/05/2013	14:05	MCS
Asbestos, Other			Not Detected	%					03/05/2013	14:05	MCS
Cellulose			2.0	%					03/05/2013	14:05	MCS
Fibrous Glass			Not Detected	%					03/05/2013	14:05	MCS
Mineral Wool			Not Detected	%					03/05/2013	14:05	MCS
Other Non-Asbestos Fibers			98	%					03/05/2013	14:05	MCS
Other Matrix Materials			Not Detected	%					03/05/2013	14:05	MCS
Sample results reported on an as-received basis											

Microbac Laboratories, Inc.
KENTUCKY TESTING LABORATORY DIVISION
3323 Gilmore Industrial Blvd. Louisville, KY 40213 502.962.6400 Fax: 502.962.6411
Evansville 812.464.9000 | Lexington 859.276.3506 | Paducah 270.898.3637 | Hazard 606.487.0511

Member ACIL

Chemical, Biological, Physical, Molecular, and Toxicological Services

CERTIFICATE OF ANALYSIS

13B1385

Kentucky DOT/Div. Env.Analyses
Odail Lawson

Date Reported	03/08/2013
Date Received	02/22/2013
Date Sampled	02/21/2013

Asbestos Analysis - FE02-019-0009-B00033N

Qualifier Definitions

The following analyses were subcontracted to a qualified laboratory:

Laboratory	Analysis	Method
MCCALL AND SPERO ENVIRONMENTAL	Asbestos, Bulk	40CFR PART 763/F

THIS REPORT HAS BEEN REVIEWED AND APPROVED FOR RELEASE:

Laura L Revlett
LAURA REVLETT , A.M.

A R. Clifton
TECHNICAL DIRECTOR, KENTUCKY DIVISION

As regulatory limits change frequently, Microbac advises the recipient of this report to confirm such limits with the appropriate Federal, state, or local authorities before acting in reliance on the regulatory limits provided.

For any feedback concerning our services, please contact Andrew Clifton, the Technical Director at 502.962.6400. You may also contact Sean Hyde, Chief Operating Officer at sean.hyde@microbac.com or James Nokes, President at james.nokes@microbac.com

13B1385

Microbac

Chain of Custody Record

Microbac Laboratories, Inc.
Kentucky Testing Laboratory Division
3323 Gilmore Industrial Blvd., Louisville, KY 40213
(502) 962-6400 fax (502) 962-6411

Certificate of Analysis No.

ort To:	O'Dail.Lawson@Ky.gov	**Microbac Information** KY TRANS CABINET	Sampled by O'Dail Lawson.
ıe:	KYTC	Customer # MA 758 1100000001 1	
ıress:	200 Mero Street	Template Name:	
	Frankfort KY	Additional Labor:_____	
Phone:	502-564-7650 Fax:		
PO#:	[redacted]		

Permit #	WWTP	Frequency	Project or Subject Reference	Samplers (signature):
			~~Dredge Sampling Ohio River~~ FE02-019-0009-B00033N	

Sample ID	Sample Description	Collected Date	Collected Time	Analysis Requested	Grab/ Comp.	No. of Cont.	Cont. Type	Preservative
B-01	5th Pier East Side	2-21-13	1:45	Bulk Sample (Asbestos %) Pier Sample	Grey.			N/A
B-02	Asphalt Joint Compound	"	2:00	"	Black			N/A

Relinquished By: Chris J Ray	Date/Time: 2/22/13 1:50	**Field Parameters:** pH: _____ Temperature: _____ Flow: _____ GPD
Received By: [signature]	Date/Time: 2/22/13 1350	**Field Limits:** **Type of Flow:**
Relinquished By:	Date/Time:	pH:
Received at Lab By:	Date/Time:	Temperature: Reg TAT

The EI Group, Inc.

This certifies that

Tilmon O'Dail Lawson

Student Address: 132 Old Fort Drive, Georgetown, KY 40324

Has attended and satisfactorily passed an examination covering the contents of an EPA/AHERA approved course entitled

Asbestos Inspector Refresher (4-Hour) Training Course

7212120004
Certificate Number

7910
Social Security Number

December 14, 2012
Course Dates

December 14, 2012
Exam Date

December 14, 2013
Expiration Date

3240 Office Point Place, Suite 200
Louisville, KY 40220
888-372-5859

Approved by:
Indiana Department of Environmental Management

Louisville,, KY
Location

Barry Maxwell, Training Manager

Kerri Boddy, Principal Instructor

Kerri Boddy, Exam Administrator

Right-of-Way Certification Form

Revised 2/22/11

☐ Federal Funded
☑ State Funded
☑ Original
☐ Re-Certification

This form must be completed and submitted to FHWA with the PS&E package for federal-aid funded Interstate, Appalachia, and Major projects. This form shall also be submitted to FHWA for all federal-aid projects that fall under Conditions No. 2 or 3 outlined elsewhere in this form. When Condition No. 2 or 3 apply, KYTC shall resubmit this ROW Certification prior to construction contract Award. For all other federal-aid projects, this form shall be completed and retained in the KYTC project file.

Date: July 18, 2014

Project Name: Reconstruct Route 9 from West 13th St to West 6th St
Letting Date: August 2014
Project #: 7763501R
County: Campbell
Item #: 06-8101.01
Federal #: NA

Description of Project: Reconstruct Route 9 from West 13th Street to West 6th Street in the City of Newport.

Projects that require NO new or additional right-of-way acquisitions and/or relocations

☐ The proposed transportation improvement will be built within the existing rights-of -way and there are no properties to be acquired, individuals, families, and businesses ("relocatees") to be relocated, or improvements to be removed as a part of this project.

Projects that require new or additional right-of-way acquisitions and/or relocations

☐ Per 23 CFR 635.309, the KYTC hereby certify that all relocatees have been relocated to decent, safe, and sanitary housing or that KYTC has made available to relocatees adequate replacement housing in accordance with the provisions of the current FHWA directive(s) covering the administration of the Highway Relocation Assistance Program and that at least one of the following three conditions has been met. (Check those that apply.)

☐ **Condition 1.** All necessary rights-of-way, including control of access rights when applicable, have been acquired including legal and physical possession. Trial or appeal of cases may be pending in court but legal possession has been obtained. There may be some improvements remaining on the right-of-way, but all occupants have vacated the lands and improvements, and KYTC has physical possession and the rights to remove, salvage, or demolish all improvements and enter on all land. Fair market value has been paid or deposited with the court.

☐ **Condition 2.** Although all necessary rights-of-way have not been fully acquired, the right to occupy and to use all rights-of-way required for the proper execution of the project has been acquired. Trial or appeal of some parcels may be pending in court and on other parcels full legal possession has not been obtained, but right of entry has been obtained, the occupants of all lands and improvements have vacated, and KYTC has physical possession and right to remove, salvage, or demolish all improvements. Fair market value has been paid or deposited with the court for most parcels. Fair market value for all pending parcels will be paid or deposited with the court prior to AWARD of construction contract. (See note 1 below.)

Note 1: The KYTC shall re-submit a right-of-way certification form for this project prior to AWARD of all Federal-Aid construction contracts. Award must not to be made until after KYTC has obtained full legal possession and fair market value for all parcels has been paid or deposited with the court and FHWA has concurred in the re-submitted right-of-way certification.

Right-of-Way Certification Form

Revised 2/22/11

☐ **Condition 3.** The acquisition or right of occupancy and use of a few remaining parcels are not complete and/or some parcels still have occupants. However, all remaining occupants have had replacement housing made available to them in accordance with 49 CFR 24.204. The KYTC is hereby requesting authorization to advertise this project for bids and to proceed with bid letting even though the necessary rights-of-way will not be fully acquired, and/or some occupants will not be relocated, and/or the fair market value will not be paid or deposited with the court for some parcels until after bid letting. KYTC will fully meet all the requirements outlined in 23 CFR 635.309(c)(3) and 49 CFR 24.102(j) and will expedite completion of all acquisitions, relocations, and full payments after bid letting and prior to AWARD of the construction contract or force account construction. A full explanation and reason for this request, including identification of each such parcel and dates on which acquisitions, payments, and relocations will be completed, is attached to this certification form for FHWA concurrence. (See note 2.)

Note 2: The KYTC may request authorization on this basis only in unique and unusual circumstances. Proceeding to bid letting shall be the exception and never become the rule. In all cases, the KYTC shall make extraordinary efforts to expedite completion of the acquisition, payment for all affected parcels, and the relocation of all relocatees prior to AWARD of all Federal-Aid construction contracts or force account construction.

Approved:	Eric J. Kinman Printed Name	Eric J Kinman Signature	Right-of-Way Supervisor
Approved:	D M Loy Printed Name	D M Loy Signature	Acting 18 July 14 KYTC, Director of ROW & Utilities
Approved:	_____ Printed Name	_____ Signature	FHWA, ROW Officer (when applicable)

Right-of-Way Certification Form

Revised 2/22/11

Date: July 18, 2014

Project Name: Reconstruct Route 9 from W 13th Street to W 6th Street
Project #: 7763501R
Item #: 06-8101.01
Letting Date: August 2014

County: Campbell
Federal #: NA

This project has 17 total number of parcels to be acquired, and 0 total number of individuals or families to be relocated, as well as 2 total number of businesses to be relocated.

11 Parcels where acquired by a signed fee simple deed and fair market value has been paid

____ Parcels have been acquired by IOJ through condemnation and fair market value has been deposited with the court

4 Parcels have not been acquired at this time (*explain below for each parcel*)

2 Parcels have been acquired or have a "right of entry" but fair market value has not been paid or has not been deposited with the court *(explain below for each parcel)*

1 Relocatees have not been relocated from parcels 87, ____, ____, ____, ____, ____, and ____ *(explain below for each parcel)*

Parcel #	Name/Station	Explanation for delayed acquisition, delayed relocation, or delayed payment of fair market value	Proposed date of payment or of relocation
76	FGH Enterprises	Suit, Submitted to Legal 03/07/2014	
87	L.J. Feinauer, LLC	Suit, Submitted to Legal 03/03/2014	
88	IPSCO Tubulers, Inc	Agreement, awaiting signed Documents	08/14/2014
89	Newport Recycling, LLC	Suit, Submitted to Legal, 02/24/2014	
71	CSX Railroad	Acquired, Signed Documents, awaiting payment	08/01/2014
84	Newport Independent Schools	Acquired, Signed Documents, awaiting payment	08/15/2014
87	L.J. Feinauer, LLC	Suit, Submitted to Legal 03/03/2014, awaiting Right of Entry	

There are 0 billboards and/or 0 cemeteries involved on this project.

There are 0 water or monitoring wells on parcels ____, ____, ____, ____, and ____. All have been acquired and are the responsibility of the project contractor to close/cap.

Form Effective Date: April 1, 2006
Last Revised: February 22, 2011

SPECIAL NOTES FOR UTILITY CLEARANCE
IMPACT ON CONSTRUCTION

CAMPBELL COUNTY
FD04 019 77635 01U
LOWELL STREET (KY 9) EXTENSION IN NEWPORT
ITEM NUMBER 06-8101.10

GENERAL PROJECT NOTE ON UTILITY PROTECTION

Utility coordination efforts determined that there are utilities that will require relocation to accommodate this construction. The information provided below in these Special Notes for Utility Clearance, Impact on Construction may not be exact or complete. The information provided is for the contractor's use in planning the execution of the work. It shall be the road contractor's responsibility to verify the completeness and/or accuracy of all such information being furnished.

Flowable Fill Requirement

The road contractor MUST use flowable fill as the backfill media any place utility facilities cross under existing or proposed roadway surfaces unless concrete encasement is called for per plan. Compacted earth or flowable fill shall be used in all other ditches within the project limits. It should also be noted that the cost of the flowable fill shall be incidental to the cost of the utility line being installed.

Maintenance of Utility Services

All existing utility facilities are to be maintained throughout road construction. Temporary utility services to maintain service are to be provided and paid for by the road contractor as incidental to road construction. No additional compensation will be paid the contractor for temporary work and materials to maintain existing utility services. No unauthorized discharge of sewage due to the road contractor's work will be allowed.

Damage to Utilities

Any intentional or accidental disruption of service due to damage to any utility service mains caused by any of the contractor's operations without three days advance notice to the utility owner shall be cause for the Cabinet to charge liquidated damages in the amount of five thousand dollars per day ($5,000/day) per occurrence against the contractor until such time as the utility service is restored.

Any intentional or accidental disruption of any individual utility service caused by any of the contractor's operations without three days advance notice to the utility owner shall be cause for the Cabinet to charge liquidated damages in the amount of five hundred dollars per day ($500/day) per occurrence against the contractor until such time as service is restored.

In the case of a main disruption or electric service, liquidated damages shall be charged at the main and/or electric service disruption rate only. Liquidated damages shall not be charged in addition for service disruptions when a main disruption is involved.

Utility Inspection

The Utility Owners will provide inspection when utility work is being performed by the contractor on their respective utility owner's facilities. It will be the road contractor's responsibility to notify the appropriate utility owner for inspection.

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Utility Shutdowns

The contractor shall notify the utility owner(s) of all planned shutdowns of utility mains or utility service to customers at least three business days in advance. Advance notice will allow for customers to be notified by the utility owner. Any unannounced disruption of any utility service that inconveniences any customer is to be avoided.

Abandoned Utilities

The contractor shall safeload the entire length of all abandoned pipes 6 inches in diameter and larger under proposed pavement and under any existing pavement that is to remain. The contractor shall safeload the entire length of all abandoned pipes 15 inches and larger which will be located outside of proposed pavement but within project limits. Appropriate bid items have been included in the road contract. The safeloading criteria above shall be observed unless otherwise directed by the Resident Engineer or his representative.

External Utility Permits

The Kentucky Division of Water permits for water relocation and sanitary sewer work were not available before letting. These items will be distributed at the preconstruction meeting.

Utility Phasing

The contractor should be aware that some phases of the road construction will need to completed first to accommodate the relocation of utilities and that some utilities will need to be relocated first to accommodate the relocation of others. The contractor should review the plans and draw his own conclusions as to the phasing of the road work and of various utilities. The contractor should pay close attention to the proximity of construction of new facilities when working in the vicinity of existing water mains and sanitary sewers to prevent blow-outs.

NOTE: DO NOT DISTURB THE FOLLOWING UTILITIES LOCATED WITHIN THE PROJECT DISTURB LIMITS

Northern Kentucky Water District, **Sanitation District No 1**, **Duke Energy Electric**, **Duke Energy Gas**, **Cincinnati Bell Telephone, Zayo Bandwidth** and **Time Warner Cable** have facilities that require relocation.

Please see the notes below pertaining to their relocations.

The Contractor is fully responsible for protection of all utilities listed above

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THE FOLLOWING COMPANIES ARE RELOCATING/ADJUSTING THEIR UTILITIES WITHIN THE PROJECT LIMITS AND WILL BE COMPLETE PRIOR TO CONSTRUCTION

N/A

THE FOLLOWING COMPANIES HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE COMPANY OR THE COMPANY'S SUBCONTRACTOR AND IS TO BE COORDINATED WITH THE ROAD CONTRACT

Duke Energy Electric, Cincinnati Bell Telephone, Zayo Bandwidth & Time Warner Cable
The companies listed above have both overhead and underground facilities to relocate and work is expected to begin around September 30, 2014 and completion is contingent upon the road contractor completing the utility duct system per the special note about underground utility ducts contained in the proposal.

THE FOLLOWING COMPANIES HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE ROAD CONTRACTOR AS INCLUDED IN THIS CONTRACT

DUKE ENERGY ELECTRIC, CINCINNATI BELL TELEPHONE, ZAYO BANDWIDTH & TIME WARNER CABLE TV will require underground utility ducts to be installed by the road contractor before their existing overhead facilities can be relocated to avoid conflicts with road construction.
Plans for the installation of this duct system are shown on the **KY 9 Electric Utilities Plan** set and included in the roadway plans with specifications in the proposal. The following note pertaining to this duct system can also be found in the proposal.

"Contractor is to allow Utility Companies complete access to perform their work to meet an April 15, 2015 clearance date. All utility ducts north of, and including those at Solar Alley, these include those under new KY 9 at Solar Alley, 10th street and 9th street, and those located under Bleith Alley must be installed before December 1, 2014, all other utility ducts, those under new KY 9 at Hunt and Hogan Alleys, can be installed during normal construction activities as utilities between Thornton Street and Hodge Street will be temporarily relocated on temporary poles to facilitate an April 15, 2015 clearance. Duke Energy, Cincinnati Bell, and Time Warner Cable is to be made aware of the completion of these installations, those performed before December 1, 2014 and those completed during normal construction activities, so as to begin moving utility lines. Any delay in the installation of the ducts north of Solar Alley beyond December 1, 2014 will cause delay to the utility clearance date and it will be the responsibility of the contractor to negotiate a revised Utility Clearance Date with Duke Energy, Cincinnati Bell, and Time Warner Cable. Delays in installing the ducts and providing the above mentioned utility companies access to the site to move utilities will be on the contractor

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and will not result in any additional payments to the contractor for delay, nor will it result in any additional construction time past the fixed completion date of the project of May 15, 2016. No claims by the contractor over utilities will be entertained if the December 1, 2014 installation date is not meet."

DUKE ENERGY (GAS) facilities shall be relocated by the road contractor using plans inserted into the plans and specifications inserted in the project proposal. Please note, roadway fill could be required to be in place before installation of these facilities. It will be the contractor's responsibility to coordinate the gas main relocation with Duke Energy Gas Division.

Only those contractors preapproved by the gas company and listed at the end of the gas specifications inserted in the proposal can perform gas relocation construction on this project. The prequalified contractors listed may or may not be prequalified by the Transportation Cabinet. It will be the bidder's responsibility to verify prequalification with the Cabinet. Duke Energy provided this listing. The fact that a contractor is included on this list does not preclude that contractor from having to be prequalified by the Transportation Cabinet.

Alignment changes to proposed gas facilities to accommodate unforeseen field conditions are possible. However, it is the responsibility of the roadway contractor to communicate any proposed gas main alignment changes to the Cinergy gas inspector and the KYTC Resident Engineer or their designated representative prior to actually modifying the proposed gas main alignment.

NORTHERN KENTUCKY WATER DISTRICT & SANITATION DISTRICT NO. 1 facilities are to be relocated by the road contractor as shown on their respective plans inserted in the roadway plans and specifications contained in the proposal. Please note, roadway fill could be required to be in place before installation of these facilities.

Any alignment changes to proposed water and/or sanitary sewer facilities to accommodate unforeseen field conditions are possible. However, it is the responsibility of the roadway contractor to communicate any proposed main alignment changes to the utility's respective inspector and the KYTC Resident Engineer or their designated representative prior to actually modifying the proposed main alignment.

RAILROADS are involved in this project. See notes in the project proposal.

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AREA UTILITIES CONTACT LIST

Utility Company/Agency	Contact Name	Contact Information

CONTACT INFORMATION WILL BE PROVIDED AT

THE PRECONSTRUCTION MEETING

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SPECIAL CAUTION NOTE – PROTECTION OF UTILITIES

The contractor will be responsible for contacting all utility facility owners on the subject project to coordinate his activities. The contractor will coordinate his activities to minimize and, where possible, avoid conflicts with utility facilities. Due to the nature of the work proposed, it is unlikely to conflict with the existing utilities beyond minor facility adjustments. Where conflicts with utility facilities are unavoidable, the contractor will coordinate any necessary relocation work with the facility owner and Resident Engineer. The Kentucky Transportation Cabinet maintains the right to remove or alter portions of this contract if a utility conflict occurs.

The utility facilities as noted in the previous section(s) have been determined using data garnered by varied means and with varying degrees of accuracy: from the facility owners, a result of S.U.E., field inspections, and/or reviews of record drawings. The facilities defined may not be inclusive of all utilities in the project scope and are not Level A quality, unless specified as such. It is the contractor's responsibility to verify all utilities and their respective locations before excavating.

BEFORE YOU DIG

The contractor is instructed to call 1-800-752-6007 to reach KY 811, the one-call system for information on the location of existing underground utilities. The call is to be placed a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor should be aware that owners of underground facilities are not required to be members of the KY 811 one-call Before-U-Dig (BUD) service. The contractor must coordinate excavation with the utility owners, including those whom do not subscribe to KY 811. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the area.

Please Note: The information presented in this Utility Note is informational in nature and the information contained herein is not guaranteed.

Specifications for Gas Main Replacement within

STATE OF KENTUCKY ROAD PROJECTS

Revised for:

KYTC Item 6-8101.10

KY 9

Duke Energy Job No. **4290372**
KY 9 South Reconstruction

June, 2014

1.0 GENERAL

1.1 Scope of Work

Gas main relocation work required for the proposed KY 9 project consists of the following work:

- Installing approximately 2,820' of 2", 4"and 8" gas main
- Renewing C-M and M-C services as needed
- Completing 5 tie-ins (Tie-ins to be completed or paid for by Duke Energy)

A Gas Contractor, approved by both Duke Energy and KYTC, shall perform the gas facility relocation work. **The General Contractor, awarded the KYTC road project, shall hire an approved Gas Contractor.** A Duke Energy Inspector will oversee all piping work performed by the Gas Contractor. Transportation Cabinet inspectors will primarily oversee vertical and horizontal placement of the main, all backfill, traffic control work, and record pay quantities for gas work in the road contract in consultation with the gas inspector.

1.2 Acceptable Gas Contractors

Installation of gas facilities on this project is limited to the following Gas Contractors due to their pre-qualification for such work with Duke Energy:

1. AMS Construction
2. RLA Investments

At the end of these specifications is a phone list for the Duke Energy approved Gas Contractors. Of these two Gas Contractors, as of June 27, 2014, only RLA Investments has been pre-approved by KYTC, although AMS Construction is in the process of becoming approved by KYTC.. Any Duke Energy approved gas contractor intended to be used for gas construction by the prime road contractor must also be pre-qualified with the Kentucky Transportation Cabinet. Any gas contractor desiring to be pre-qualified by the Cabinet may do so by making application to the Cabinet's Division of Contract Procurement by calling 502-564-3500. It shall be the bidder's responsibility to verify a gas contractor's pre-qualifications. **Department of Transportation regulations prohibit any non-qualified contractor from performing any gas main work. This includes, but is not limited to excavation, main lowering, pipe installation, service installation, and back filling.**

1.3 Standards

In addition to these specifications, all facilities must be installed in accordance with the 2007 Advanced Main Replacement Program (AMRP) Specifications, the Duke Energy's Gas Division Specifications (GD-150 Composite), CFR part 192, and all applicable specifications. These General and Technical Provisions shall be made a part of this project contract by reference. Copies are available from Duke Energy. Where the following specifications and those referenced are in conflict, the following specifications shall govern and take precedence.

1.4 Definitions

Where the word "**Engineer**" appears in these specifications or on the gas plans, it shall be understood the "Engineer" is the Kentucky Transportation Cabinet (KYTC) Resident Engineer or his/her designated representative and the Duke Energy Engineer or his/her designated representative jointly. Both Engineers must mutually agree upon all decisions made with regard to the gas line construction. The Transportation Cabinet, Resident Engineer shall make all final decisions in all disputes. The Resident Engineer is ultimately responsible for the engineering supervision of the road contract.

Where the word "**Gas Inspector**" or "Inspector" appears in these specifications or on the gas plans, it shall be understood the "Inspector" is the Duke Energy Gas Inspector or his designated representative.

Where the words "**Resident Engineer**" appears in these specifications or on the gas plans, it shall be understood the "**Resident Engineer**" is the KYTC Resident Engineer or his designated representative.

Where the word "**Road Contractor**" appears in these specifications or on the gas plans, it shall be understood the "**Road Contractor**" is the General Contractor that was awarded the road improvement project by KYTC and that hired the Gas Contractor for the gas replacement work.

Where the word "**Gas Contractor**" appears in these specifications or on the gas plans, it shall be understood the "**Gas Contractor**" is the Duke Energy and KYTC approved contractor hired by the Road Contractor to perform the gas replacement work within the KYTC Road Project.

1.5 Video Taping

Duke Energy recommends that the Gas Contractor videotape every project prior to starting. The video is extremely important in settling disputes with governing agencies.

1.6 Permits & Fees

All permits for the replacement work will be obtained by Duke Energy, and will be provided to the Gas Contractor by the Gas Inspector prior to the start of work. Duke Energy will pay all permit fees except cut/fill fees. Cut/fill fees required for dumpsites will not be paid by Duke Energy except for material dumped for main tie-ins where the Gas Contractor is paid directly by Duke Energy on a time and material (T&M) basis. The Gas Contractor will be responsible for

all tree damage unless the damage was a result of a direct order by the Engineer. Clean up and restoration on all projects must be in compliance with KYTC and local governmental agencies and must be approved by the Duke Energy Inspector. It is the sole responsibility of the Gas Contractor to check with governing agencies for work hour restrictions. No compensation will be given for restricted work hours or crews working at night.

1.7 Training

Duke Energy will require the Gas Contractor to qualify all necessary personnel on polyethylene fusion and mechanical connections. Duke Energy will provide training to the Gas Contractor on the renewal of services by insertion and mechanical, installation of meter sets, turn off, turn on and appliance light up. Gas Contractors will be trained for free on Duke Energy policies associated with spotting unacceptable meter locations and the identification of tin meters and mercury regulators. Only Duke Energy personnel shall handle mercury regulators. Safety procedures, grounding procedures, and a review for sizing services will also be covered in the training.

1.8 Security

Picture ID’s are required for all Gas Contractor employees. Gas Contractor personnel are required to show their ID’s whenever asked by customers or Duke Energy Personnel.

2.0 MATERIAL

2.1 Duke Energy Supplied Materials

Duke Energy will provide all:

- Steel and polyethylene pipe,
- Steel and polyethylene pipe fittings, flanges, adapters, couplings, etc.
- Valves and valve assemblies,
- Regulators,
- Regulator vaults or enclosures,
- Cathodic protection material,
- Other associated gas pipe materials required for the replacement work.

This job consists of two gas mains being installed parallel to each other. One gas main will be a distribution main operated at 60 psig and will be constructed with 2", 4" and 6" yellow medium density polyethylene (MDPE) pipe. The other gas main will be constructed with 6" and 8" epoxy coated steel, Grade B or stronger, and will be operated at over 100 psig.

2.1.1 Material Delivery and Tracking

Duke Energy supplied material will be delivered, as the Gas Contractor needs it. Material for the entire project will not be delivered all at once. It will be the responsibility of the Gas Contractor to meet the delivery truck, to track material received, and to provide weekly reports showing material received, material used, and material remaining. The material assigned to a specific project is to be used on that project only. All surplus materials, at the end of the project, are to be returned to the storeroom or a credit requisition completed allocating the material to another job. The material must be returned or requisitioned to another job in the same condition that it was received. A certain percentage of waste will be applied to the pipe. All other unaccounted, damaged or material left unprotected will be the responsibility of the Gas Contractor.

Service Material will be delivered to each Gas Contractor yard. Each Gas Contractor will be required to provide an adequate shelter area with shelves to organize all the service material. The Gas Contractor will provide a person to receive material, organize and reorder material as needed.

2.2 Contractor Supplied Materials

The Gas Contractor is required to provide all materials and equipment other than as indicated on the construction drawings that are necessary to construct the project. All welding materials such as welding rods, grinding wheels, clamps, etc is to be provided by the Gas Contractor.

Pipe Bedding
Pipe bedding shall meet the requirements for Pipe Bedding as contained in Kentucky Department of Highways, Standard Specifications for Road and Bridge Construction.

Flowable Fill / Low Strength Mortar Mix
Flowable fill & Low Strength Mortar shall meet the requirements of the Kentucky Department of Highways, Standard Specifications for Road and Bridge Construction. Low Strength Mortar is required as backfill under all existing and proposed KYTC roads.

Surface Restoration Materials (Temporary and Permanent)
All restoration materials shall meet the requirements of the appropriate sections of Kentucky Department of Highways, Standard Specifications for Road and Bridge Construction.

2.3 Contractor Requirements for Coiled MDPE Pipe Delivery & Handling

Pipe trailers will be a requirement for handling coiled pipe. Brecon, Duke Energy's material storage facility, does not have the equipment necessary to deliver 6" coiled pipe to the job site. Duke Energy will make every effort to have the large diameter coils delivered to the Gas Contractors' material holding area at the start of each project. If Duke Energy is unable to make these arrangements, it will be necessary for the Gas Contractor to pick up these large diameter coils at Brecon. Duke Energy will pay the Gas Contractor for pick up and delivery in these cases.

The coil dimensions of the current Performance Pipe (Driscopipe/Plexco) product that the trailer will need to be able to accommodate is:

Pipe Size	Coil Footage	Wt. Per Coil	Min. Coil ID	Max. Coil OD	Width
2"	500'	315 lbs.	51"	78"	13"
3"	315'	422 lbs.	68"	96"	15"
4"	500'	1110 lbs.	68"	94"	41"
6"	500'	2040 lbs.	84"	120"	50"

The capacity of the trailer must be able to accept all current known coil sizes from all major manufacturers of 2", 3", 4" and 6" PE pipe.

2.3.1 Loading System

The trailer will need to have some form of loading mechanism in which the trailer can be field loaded from a Brecon material truck at the job site or loaded at the pipe yard at the Brecon facility. If the trailer does not have a loading mechanism then the Gas Contractor should make provisions to have the necessary equipment available to safely load the coils without damaging the pipe.

2.3.2 Rerounding/Taming equipment

The Trailer shall be equipped with the necessary equipment to re-round the coiled pipe and remove the curvature conditions created in the pipe by the coiling process. There are no definable parameters to the approved straightness, however pipe should be able to lie flat in a

trench when straightening is complete as well as not cause additional stress to pipe when inserting.

3.0 JOINING PIPE

3.1 Welding Steel Pipe

All welds will be made in accordance with Duke Energy's Gas Division welding specifications. The Gas Contractor is responsible for ensuring that the proper Welding Specification is used for the grades and wall thicknesses of pipes being welded together.

Specification No. 501-2	Standard Welding Procedure SA-II-A-II: For Steel Pipe With O.D. from 2 3/8" to, and including 12 ¾ " and wall thickness 0.188" to, but not including 0.250"
Specification No. 501-3	Standard Welding Procedure SA-III-A-III: For Steel Pipe with O.D. greater than 12 ¾ " and wall thickness 0.250" to, but not including 0.344"
Specification No 501-20	Standard welding Procedure SA-F1-A-V: for fillet welds on steel pipe for socket –weld couplings, slip-on flanges, and full encirclement welding sleeves.

All welders must be pre-qualified in accordance with Duke Energy's Gas Division specifications prior to the start of construction. All testing for welders will be in accordance with API Standard 1104, Section 3.3 at the Gas Contractor's cost. The Inspector will visually inspect all welds.

3.2 Joining Plastic Pipe

Butt fusion will be considered the primary method of joining longitudinal sections of MDPE main. Rotary scrapers will be required when joining 4" and larger pipe in the trench. Electro-fusion may be used at the discretion of the Inspector. Electro-fusion couplings are the second choice in joining MDPE pipe. Two couplings are required per Duke Energy Gas Standards when joining directionally drilled pipe.

Bar clamps must be used to secure 2" pipe and larger pipe when joined by electrofusion. Personnel found joining pipe without the proper line up clamps and fusion equipment will lose their fusion cards. **NO SECOND CHANCES WILL BE GIVEN FOR SHORT CUTS TAKEN WHEN JOINING PIPE**.

When installing plastic valves using electrofusion couplings a 3 ft pup-piece of pipe should be fused to the valve prior to electrofusion so that the coupling could be cut-off in case of incomplete/improper fusion.

4.0 GAS MAINS

4.1 Inspection

The road contractor must contact Duke Energy (Chuck Allen 513-287-2588) 1 month prior to the beginning of any gas main work so that Duke Energy can plan for the construction project. Duke Energy will provide a Gas Inspector on all main replacement projects. The Inspector will have multiple projects to cover and will not be on site at all times. No changes to the project drawings shall be made without the joint consent of the Duke Energy Engineer or Gas Inspector AND the KYTC Resident Engineer or his inspector. The Gas Inspector will record the as-built location of the gas main, track the pay and non-pay item quantities, and provide general guidance to the Gas Contractor and assistance to the Resident Engineer. **The Gas Inspector works for Duke Energy and not the Road Contractor.**

4.2 Depth and Location of Main

As of October 27, 2004, KYTC requires that all newly installed underground utilities be buried at a minimum depth of 42" under roadways, ramps, and ditch lines, and 30" in all other areas within state right-of-way. Gas mains crossing under state routes must have a minimum depth of 60" from final grade.

All mains are to be installed at the depth or elevation, and location specified on the project drawings. No changes to the project drawings shall be made without the joint consent of the Duke Energy Engineer or the Gas Inspector AND the KYTC Resident Engineer or his inspector. The Duke Energy Engineer has designed the proposed gas main location to avoid conflicts with proposed and existing utilities and grades. Changes to the planned alignment without the consent of the Duke Energy Engineer AND KYTC Resident Engineer may result in conflicts with other proposed facilities. **It is the responsibility of the Road Contractor to stake the proposed alignment of the gas mains for the Gas Contractor.** Spreadsheets containing the coordinates (Station and Offset) and top of main elevations of the proposed alignment are attached to end of these specifications.

4.3 Installation Methods

Direct bury is the preferred installation method for the gas main replacement work within the Road Project. Directional drilling of main is an alternative installation method that will be considered by the Duke Energy Engineer AND the KYTC Resident Engineer on a case-by-case basis. The following paragraphs discuss these installation methods.

4.3.1 Direct Bury

The trench shall be excavated to accommodate the minimum specified cover over the main from proposed final grade, the pipe outside diameter, and a minimum of 4 inches of bedding material below the pipe. Where the main is being constructed within proposed ditch lines, across final pavements, and along final roadways, the trench shall be excavated to accommodate a minimum of 48 inches of cover over the main from final grade. The minimum cover shall be increased to 60 inches when crossing streams. Plastic mains crossing State of Kentucky maintained roadways

shall be encased in steel pipe of sufficient diameter (see GD-150) to contain the main. The minimum trench width shall be 24 inches + the outside diameter the gas pipe. The Gas Contractor shall string the pipe along the trench and join the pipe. Services shall be installed with a minimum horizontal separation from the existing service of 12 inches.

Once the pipe has been joined, the contractor shall lift and carefully lower the pipe into the center of the trench. The Gas Contractor is cautioned to handle the pipe carefully so as to minimize damage to the pipe. Additional bedding material shall be placed around the pipe and compacted in equal lifts so as to avoid lateral displacement. Bedding material shall be placed in lifts not to exceed 6 inches compacted depth. Bedding material shall be placed to a level approximately 12 inches above the pipe barrel. Bedding material shall not exceed the approximate 12 inches level over the pipe barrel. The bedding material under, around, and over the pipe shall be compacted using a vibratory compactor.

Once the pipe has been placed, trench excavated material or flowable fill shall be used to backfill the remainder of the trench. Trench excavated material shall be placed in the trench and shall be compacted to 95% maximum standard Proctor density with hand operated equipment. The Gas Contractor may use flowable fill for trench backfill at his cost. **When installing gas mains under existing or proposed KYTC roadways, the contractor must backfill with flowable fill to the subgrade elevation.** The cost of this flowable fill shall be incidental to the gas bid items. Granular material shall not be used as trench backfill.

4.3.2 Directional Drilling

Directional drilling is an accepted method for pipe installation and must comply with all the guidelines set forth in this specification. **The Duke Energy Engineer must approve all directional drilling.** The Gas Contractor must record the location and depth of the directional-drilled gas main at an interval of fifty (50) feet or less. The Gas Contractor shall excavate a test hole at least every 200-feet of bore to verify the location and depth of the drilled gas main.

For all directional-drilled gas main, the location and depth of all sewer laterals shall be determined and documented prior to drilling to insure there is no conflict between the proposed gas main and the existing sewer. A Sewer Lateral Location Plan must be submitted to Duke Energy and approved prior to the Gas Contractor performing any directional drill work; no additional money will be paid for this plan. **The gas contractor must perform a pre and post camera of all sewer lines and laterals.** Acceptable methods for locating the laterals are a camera or by physically uncovering the lateral. The Gas Contractor must install a sewer tag on every sewer clean out. Duke Energy will supply these tags.

4.4 Backfill

Backfill shall be compacted to 95% optimum density throughout the project regardless of location unless otherwise shown in the plans or directed by the Engineer. Granular backfill will not be allowed.

4.4.1 Flowable Fill (Low Strength Mortar Material)

When installing gas mains under existing or proposed roadway pavement, or when shown on the plans, the contractor must backfill with flowable fill to the subgrade elevation.

4.5 Lowering Main in Place

The Gas Contractor shall excavate along existing gas mains and lower the top of the mains in place to the elevations specified on the Gas Plans. The length of trench either side of the point to be lowered, required to ensure stresses are minimized in the pipe after it is lowered, is specified on the Gas Plans. Lowering mains in place shall be accomplished by:

- Excavate trench along both sides the existing main so it transitions down from the bottom of the main at one end of the trench to below the required top of pipe elevation at the point or length to be lowered, and then transitions back up to the bottom of the main at the opposite end of the trench. Excavate the soil from over and under the main as the trench is excavated. Additional trench depth should be excavated to accommodate sand bedding.
- Support the exposed steel mains at a minimum of 50-foot intervals and MDPE mains at a minimum of 100-foot intervals (unless specified otherwise on the plans) using side booms, track-hoes, blocking/skids, or sling supported from a beam or section of pipe placed across the trench width.
- Clean the pipe and visually check line for any damage. The protective coating on steel mains should be jeeped for holidays. Make repairs as needed per Duke Energy standards.
- Bed the bottom of the trench with 6” of sand.
- Lift the pipe using slings and side booms or track-hoes. Remove the pipe supports and lower the main into the trench. Adjust supports before lifting the main so they are not at or near girth welds.
- Check the top of main elevation at the point or over the points to be lowered to see if the top has been lowered to or below the elevation specified.

The lowering of main in place shall only be done by Duke Energy approved Gas Contractors or Duke Energy Crews.

4.6 Damage to Gas Facilities

The Gas Contractor must notify the Duke Energy Inspector whenever gas leaks or any questionable situation is encountered. The Gas Contractor shall not repair any active services or mains that may be damaged during construction.

4.7 Casing Pipe

4.7.1 Casing Under State of Kentucky Roads

All plastic piping placed under existing or proposed State of Kentucky Roads shall be encased in coated steel pipe, unless an exception has been received from KYTC. The top of the casing pipe

shall be a minimum of 4 feet below final grade of all roads between opposing roadside ditch lines. All welded joints shall be water tight and coated. The casing shall be cathodically protected with anodes. The ends of the casing pipe shall be sealed with link seals, foam, or other water resistant material. A test connection and test box shall be located at one end of the casing pipe.

4.7.2 Casing under Railroad Tracks

Agreements between Duke Energy and the Railroad must be signed before any utility work is performed on Railroad property. Railroad crossings require steel mains encased in steel casing if the top of the casing pipe is installed between 5.5 feet and 10 feet below the base of the rails. Un-cased steel mains can be installed if the top of the main is installed below 10 feet from the base of the rails. The Gas Contractor shall follow the terms and conditions outlined in the Crossing Agreement.

Railroad personnel are required to be present at the time of the crossing. The Gas Contractor must notify the Railroad before the crossing. Bored and Jacked installations shall have a borehole diameter essentially the same as the outside diameter of the casing pipe. The top of the casing pipe shall be more than 5.5-feet below the base of the railway rail. The carrier pipe shall be centered in the casing pipe and sealed and vented in accordance with Duke Energy Standards.

4.8 Leak Testing

Leak Testing shall be performed on all newly installed gas main. The contractor must supply all test gauges and the appropriate certification to Duke Energy prior to performing any air leak test on installed piping facilities. The testing equipment must be certified annually and the certification sent to Duke Energy Gas Engineering. The contractor will also be required to have certified purging equipment.

4.9 Hydrostatic Testing

The contractor must supply all labor, equipment, and material to perform and complete the hydrostatic testing of all installed feeder line. Dead weight testers, temperature, and pressure recorders (8” diameter minimum chart size) must be certified for accuracy within the last 6 months of their use date. The contractor will also be required to have certified purging equipment. The minimum test pressure is 750 psi (1.5 x design MAOP) and the preferred test media is water. The maximum test pressure should not exceed 50% of the pipes SMYS. If elevation differences between the low and high spot along a test section are significant, pressure gauges should be placed at these locations to ensure that the minimum test pressure of 750 psi is reached for the entire length of main. The minimum hydrostatic test length is 8-hours. All hydrostatic test waters shall be disposed of in accordance with local and state regulations.

4.10 Gas Main Tie-Ins

The Gas Contractor will be required to complete most tie-ins. However, **Duke Energy reserves the right to perform all tie-ins to the existing gas mains.** On steel mains, tie-ins will require the installation and tapping of TD Williamson fittings. Tie-ins on polyethylene mains will

require squeezing off the main and installing the appropriate saddles. Tie-ins on cast-iron mains will require making appropriate taps for connecting. The Gas Contractor will be required to have the following equipment:

- T D Williamson equipment for 2" through 6" steel mains. The Gas Contractor is not required to purchase 8" and 12" T D Williamson and other pertinent equipment; however, Duke Energy would like the Gas Contractor to own this equipment.
- Squeeze-off equipment for 2-inch through 8-inch polyethylene,
- Stopper bags for 2-inch through 12- inch cast iron.
- 4-inch and smaller guillotine saws,
- Electro-fusion equipment,
- Air Test and Hydrostatic Testing Equipment, and
- Other pertinent equipment necessary to tie in 2-inch through 6-inch steel and polyethylene mains.

It will be the responsibility of the Gas Contractor to meet with the Duke Energy inspector, prior to scheduling any tie in work, to discuss the equipment and personnel necessary to perform the work. Duke Energy will provide pressure crews to assist on tie in and purging activities.

Wipe test are required when performing tie-ins over 4" in diameter. The Gas Contractor must notify the Gas Inspector whenever liquid condensate is visible in the existing mains. The Road Contractor is responsible to provide a space for a roll off box if it is determined that there is PCB contaminated pipe on site. The Gas Contractor is responsible to keep the roll off box covered at all times. Duke Energy will provide the roll off box and dispose of any PCB contaminated pipe found on site.

The Gas Contractor must supply all labor, equipment, and material necessary to abandon mains that are replaced in the road project. This work includes purging, capping, sealing, cutting, or removing and disposing of sections of abandoned main.

Tie-ins on many Duke Energy mains are pressure and/or temperature dependant. Duke Energy will not allow tie-ins to be made on most mains between November 1 and April 30 if the temperature is below 45 degrees Fahrenheit. During this time of year tie-ins will be looked at on a case by case basis by Duke Energy's Gas Control and Pressure Departments to evaluate the feasibility of completing the tie-in.

Any tie-in completed by the gas contractor will be paid for by Duke Energy. Tie-in work will not be included in the road contract.

4.11 Restoration

All gas facility replacement work will likely be performed within the limits of the KYTC Road Project during its active construction by the Road Contractor. **Final restoration of all areas is the responsibility of the Road Contractor**; however, the Gas Contractor may have to perform some restoration to maintain traffic and insure public safety. All areas, which are disturbed during gas main construction, which are outside of road construction limits, shall be replaced in-kind. All restoration shall be performed to the satisfaction of the KYTC Resident Engineer. The

KYTC Resident Engineer shall approve all temporary and permanent restoration materials and their placement. Contractors will be responsible for maintenance of any restoration they install.

5.0 GAS SERVICES

The Gas Contractor will be required to renew customer services from the gas main to the customer's service meter. The service lines are broken into two portions: the main to curb cock portion (M-C) and the curb cock to service meter portion (C-M). The M-C portion of the gas service line is usually contained entirely within road right-of way. The C-M portion of a service line is mostly on private property, but a portion of it may be within road right-of-way. Duke Energy and its contractors are solely responsible for gas work performed outside the road construction limits.

The Gas Contractor is required to complete all associated Job Control Forms (JCF's) with the service work. JCF's must be completed within one day of the completion of the service work. JCF's which are not filled out correctly will be returned to the contractor for correction.

5.1 Main to Curb (M-C) Services

M-C services are broken up between short-side and long-side M-C. M-C short side services are less than 15 feet in length, regardless of the installation conditions. M-C long side services are over 15 feet in length and usually cross under roadways. It is possible to have all long side (crossover) services on a project. The main to curb portion of the service lines must be installed at the depth of the relocated main, this is particularly critical when crossing existing or proposed roads with the long-side piping.

5.2 Curb to Meter (C-M) Services

C-M services that do not pass the required pressure test or services that are metallic (steel or copper) will be renewed. The renewal work shall include turning on and off the services, separating existing facilities for testing, excavating, air testing, rebuilding of the meter set, setting a new meter bracket, replacing the meter as required, and re-lighting the customer appliances. Renewed C-M service lines shall be installed at a minimum depth of 18 inches on customer owned property.

Existing polyethylene services shall be reconnected to the new mains if it passes testing. The Gas Contractor will be required to turn off and to re-light customer appliances in accordance with the planned service replacement work and the Duke Energy approved procedures. The Gas Contractor shall red tag all customer bad appliances and notify the Gas Inspector of the problem. Duke Energy will deal with the customer. Contact the gas inspector whenever anything unacceptable is found.

Conversion projects where gas services must be converted from standard pressure to intermediate or high pressure will require the installation of regulators and vent piping. The Gas Contractor must make arrangements with the Gas Inspector to Leak Survey every C-M service

the same day it is installed. All service holes outside the pavement area are to be covered with ¾" plywood and flasher barricade.

The Gas Contractor will be required to replace tin meters and mercury regulators associated with the renewal of curb to meter services. This replacement cost must be included in the curb to meter renewal unit price. Duke Energy will train Gas Contractors for free on the policies associated with spotting unacceptable meter and house service line locations and the identification of tin meters and mercury regulators. Only Duke Energy personnel shall handle mercury regulators. If the household service lines or meters are found in an unacceptable location, the meters may be relocated to the outside.

6.0 DESCRIPTION OF PAY ITEMS

This section describes the gas utility pay items for this project. Pay items are broken up in to two categories:

1.) Pay items billed to the Road Contractor; and
2.) Pay items billed to Duke Energy directly.

6.1 Pay Items Billed to the Road Contractor

The Gas Contractor shall invoice the Road Contractor for all contracted pay items under **Section 7.1** according to the actual units installed. **The Road Contractor shall pay the Gas Contractor for any work performed at the Road Contractor's request that is outside the items contracted with the Road Contractor and that was not pre-approved by Duke Energy and the Cabinet; Duke Energy shall not be billed for this work.** The Road Contractor shall pay the Gas Contractor for actual quantities installed and not for those estimated on the bid sheet. The Road Contractor shall be reimbursed by KYTC. KYTC will bill Duke Energy for the gas facility work after the entire Road Project is completed.

6.1.1 Length of Gas Main Installed

The length of gas main will be **paid on a linear foot or meter basis** based on the type and size of pipe installed. Payment will only be made for main that has been placed into service. Each size pipe shall be measured along the centerline of the pipe through fittings and casements from end to end. Where the pipe changes size, the particular size pipe shall be measured to the center of the transition fitting. No payment will be made for temporary offsets. **No additional payment will be made for rock excavation or extra depth; bidders must draw their own conclusions as to the subsurface conditions to be encountered.**

This item shall include all costs for labor, equipment, and materials (besides pipe and fittings) necessary to install the gas main. Installation of gas main shall include costs for the following:

- Mobilization,
- Saw cutting pavement,

- Traffic Control (flag-persons, arrow-boards, signs, plates, etc). Gas Contractors should be able to take advantage of the Road Contractors Traffic Control.
- Excavating the trench to the proper depth and width or drilling **in rock or soil**,
- Removal and disposal of spoil,
- Bores required to install 6-inch and smaller mains,
- Stringing the pipe along trench,
- Fusing or welding the pipe,
- Test welds or fusions,
- Sand bedding material,
- Flowable Fill or Low Strength Mortar backfill under existing and proposed roads and as required,
- Bedding the pipe,
- Lifting the joined pipe into trench,
- Coating welds and couplings,
- Excavation for utility location, including test holes,
- Installing tracer wire and test boxes,
- Installing anodes and test boxes,
- Backfilling the trench,
- Air testing,
- All temporary restoration
- All final restoration outside the disturbed road limits (including seed) as required in accordance with the plans and specifications.

No additional payments will be made for restoration and backfill if mains are directional drilled instead of direct buried.

6.1.2 Lower Main In Place

Gas mains lowered in place will be **paid on a linear foot or meter basis** of excavated trench per the size of pipe to be lowered. If service lines have to be relocated for the lowering, they will be paid for under the appropriate bid item. **No additional payment will be made for rock excavation, flowable fill, or extra depth.**

6.1.3 Boring – No Casing

This unit will be **paid on a linear foot or meter basis** for bores required to install 8 inch and larger steel main. The cost for bores required to install 6-inch and smaller mains must be included in the main installation unit price. This unit shall be reported for payment by size of the pipe installed in the bore regardless of the size of the bore and shall include all costs associated with completing the bore as well as setting up the bore machine. The cost of installing the gas main in the bore is in addition to the cost of the actual bore and should be reported for payment under length of gas main installed.

6.1.4 Boring With Steel Casing

This unit will be **paid on a linear foot or meter basis** for the size of the casing installed in the bore regardless of the size of the bore and shall include joining, excavation, the installation of all insulators, seals and vents in accordance with Engineering Standard 2.12.1. The Gas Contractor shall be paid for installing the gas main in the casing on a linear foot or meter basis per type and size of main in addition to the length of casing installed. No additional payment will be made for boring through rock.

6.1.5 Steel Casing – No Bore (Open Cut)

This unit will be **paid on a linear foot or meter basis** for the size of the casing installed in the trench. This work shall include joining the casing pipe, coating welds, installing anodes, installing test connections and test boxes, and sealing ends around carrier pipe. The Gas Contractor shall be paid for installing the gas main in the casing on a linear foot or meter basis per type and size of main in addition to the length of casing installed.

6.1.6 Valve Assembly

Valve assemblies will be **paid for on a lump sum basis** for the type and size of valve installed. The unit price for each valve installation includes setting the valve box to proper grade and the installation of pressure stems in accordance with the appropriate standard. For steel valves, the cost of welding the companion flanges, bolting the valve to the companion flange or welding the valve directly onto the line is included in the valve installation unit.

When installing plastic valves using electrofusion couplings a 3 ft pup-piece of pipe should be fused to the valve prior to electrofusion so that the coupling could be cut-off in case of incomplete/improper fusion.

6.1.7 Main Tie-Ins

Main tie-ins will be **paid on a lump sum basis** based on the size and type of main. The lump sum costs shall include:

- All time associated with separating the existing facilities and reconnecting to the new main,
- Preparation of any and all by-pass requirements,
- Installation of fittings, such as TD Williamson,
- Excavation, without regard to the classification of the materials.
- Preparing cast iron mains by installing appropriate saddles and making appropriate taps in accordance with standards,
- Abandonment of the existing facilities to include purge and sealing the main ends in accordance with standards,
- Transportation and cleaning of the T D Williamson equipment,
- Traffic Control (Flag-persons, arrow- boards, signs, and plates). Gas Contractors should be able to take advantage of the Road Contractors Traffic Control.
- Backfill material including Low Strength Mortar as required

- Surface restoration

Duke Energy reserves the right to allocate work to company personnel at any time to provide assistance with the tie-ins to insure completion in a timely manner.

6.1.8 Services - Main to Curb (M-C) Short Side & Long Side

Main to Curb (M-C) service work shall be **paid on a lump sum basis**. This item shall include all labor, equipment, and materials, necessary to install the gas service. This bid item includes installing 4 inch x 1 inch plastic stab tee, 1 inch plastic cap (at tee and end of service), plastic curb box (bottom and top), curb box lid, and necessary 1 inch plastic pipe with tracer wire. This item also includes air testing service and tapping tee. Services shall be installed with a 12-inch horizontal separation from the existing service.

M-C service work shall include all costs for the Gas Contractor's completion of all associated paperwork (JCF's, etc). Any temporary or permanent hard or soft surface restoration required for main to curb or curb to meter service installations outside the limits of road construction shall be considered incidental to the contract. No separate payment shall be made for restoration outside the limits of road construction. The Gas Inspector must be notified after a failed service line has been repaired so a record of the event can be logged and the inspector can verify that the repair was adequate.

6.1.9 Gas Facility Coordination

A bid item has been established in the road contract for "Gas Utility Coordination" which can be freely **bid by the Road Contractor**; this is not a bid item for the Gas Contractor. KYTC will pay the Road Contractor this bid amount **for coordinating the gas facility work within the Road Project**.

KYTC and Duke Energy have established unit prices for gas facility items listed in the Road Project Bid. These are the unit prices that Duke Energy agrees to pay KYTC and KYTC will use to pay the Road Contractor for actual quantities installed by the Gas Contractor. The Road Contractor may likely want to pay the Gas Contractor according to these negotiated rates; however, it is not required. The Road Contractor may pay the Gas Contractor at whatever unit price is negotiated between them (either higher or lower than the preset unit price).

6.2 Pay Items Billed to Duke Energy

The Gas Contractor shall invoice Duke Energy directly for all work, requested by Duke Energy, not included in the road contract including all tie-ins, Curb to Meter service renewal related work and any additional work determined necessary by the Duke Energy Engineer. The Gas Contractor will be paid for, if possible, according to the current calendar years negotiated rates submitted for the Accelerated Main Replacement Program (AMRP).

The Gas Contractor shall only bill one project per invoice; do not send two or more projects on one invoice. The Gas Contractor shall not add any items to the pay sheets after the Gas Inspector has signed them. Additional pay items shall be placed on a separate pay sheet and signed by the Duke Energy Inspector.

The Road Contractor shall pay the Gas Contractor for any work performed at the Road Contractor's request that is outside the items contracted with the Road Contractor and that was not pre-approved by Duke Energy and the Cabinet; Duke Energy shall not be billed for this work.

6.2.1 Services - Curb to Meter (C-M)

Curb to Meter service renewal will be **paid on a lump sum basis** by line size (1" or 1-1/4", 2", 3", 4", etc) and type of installation (direct bury, drill, or insertion). The curb to meter price shall apply to a service up to seventy (70) feet. Any footage required over 70 feet will be paid at the price of $ 7.00 per foot (excluding insertions). Payment for curb to meter services will be made when they are placed into service and the restoration and appropriate paperwork is complete on a street.

C-M service work shall include all costs for the Gas Contractor's completion of all associated paperwork (JCF's, etc). Any temporary or permanent hard or soft surface restoration required for main to curb or curb to meter service installations outside the limits of road construction shall be considered incidental to the contract. No separate payment shall be made for restoration outside the limits of road construction. The Gas Inspector must be notified after a failed service line has been repaired so a record of the event can be logged and the inspector can verify that the repair was adequate.

6.2.2 Test & Re-Light

Test & Re-Light work will be **paid on a lump sum basis** for polyethylene C-M service lines that pass the required pressure test. The Test & Re-Light work includes turning on and off the gas service, separating existing facilities for testing, air testing, re-connecting the meter set, and re-lighting the customer appliances.

If flexible risers are encountered, they will be replaced at the test and relight unit price plus an agreed unit price of $75.00 for each additional hole excavated. If additional holes are necessary, they shall be added to the road contract by change order at the agreed unit price of $75 each.

Duke Energy may also arrange for direct payment to the contractor for additional holes in lieu of a change to the road contract.

6.2.3 Meter Relocation

The cost to move meters from an unacceptable location shall be included in the C-M service unit cost; no additional payment will be made. Any house-line piping that must be relocated will be negotiated and paid for directly to the Gas Contractor by Duke Energy on a time and material basis. In the case where the meter is in an acceptable location and the customer asks the Gas Contractor to relocate the meter outside, the Gas Contractor must negotiate a price with the customer for any house line piping that must be relocated.

When moving remote meters to the outside, the Contractor must reuse the existing meter, re-attach the remote reader and verify that reads of the meter and the remote are the same. When moving meters outside make sure to replace a non-temperature compensated meter with a temperature compensated meter.

6.2.4 Pressure Conversion Projects

Replacement projects where gas services must be converted from standard pressure to intermediate or high pressure will require the installation of regulators and vent piping. The installation of regulator vent piping will be paid on an agreed pre-set lump sum price of $55.00 for piping up to 10-feet in length and be paid on an agreed pre-set linear foot or meterage price of $2.50 per foot for lengths over ten feet . Any additional holes will be paid at an agreed pre-set price of $75.00 each.

6.2.5 Large C-M Service Reconnection to M-C

The reconnection of polyethylene or coated steel C-M services 2” and larger to the M-C portion of the service line will be negotiated and paid for directly by Duke Energy on an hourly basis.

7.0 INVOICING

It is the Gas Contractor's responsibility to know <u>how</u>, <u>by whom</u>, and <u>for what</u> he is being paid.

The Gas Contractor shall invoice the Road Contractor for all work performed to complete items listed under **Section 7.1** and for any extra work negotiated with the Road Contractor. The Road Contractor then invoices KYTC for this work. The Gas Contractor shall talk to the Resident Engineer if the Road Contractor is behind in paying the invoices.

The Gas Contractor shall invoice Duke Energy for all work performed to complete items not included in the road contract and for any extra items (contract addendums) directly negotiated and intended to be paid by Duke Energy. These invoices shall be sent to: Duke Energy at 139 E. 4th Street, Room 460A, Cincinnati, OH, 45201, to the attention of the sponsoring engineer. These addendum items should not be invoiced with items that were bid.

7.1 Weekly Pay Sheets

The Gas Contractor must **meet** with the Duke Energy Inspector and the Resident Engineer or inspector on a **weekly basis** to sign off on all pay sheets (preferably Friday evening or Monday morning). The pay sheets must describe all T&M work and break out the costs according to the appropriate Duke Energy work code. The daily sheets should clearly identify the start and stop times for the T&M on each date along with the inspector's signature for approval on that date.

Duke Energy Pre-qualified Gas Contractor Phone Numbers (REVISED 6/27/14)

AMS Construction – 10670 Loveland Madeira Rd., Loveland, OH 45140
Phone- 513-794-0410 Fax: 513-794-0414
Contact: Dale Franklin, Cell Phone - 513-276-032

RLA Investments – 603 Sheperd Lane, Cincinnati, Ohio 45215
Office: 513-554-1469 Fax: 513-554-1221
Contact: Scott Moody, Cell Phone – 513-623-4258

Water Specifications

Section I

DESCRIPTION OF BID ITEMS

1. DUCTILE IRON PIPE (ALL SIZES) Includes the specified pipe, tracing wire with test boxes, polyethylene wrap, labor, equipment, excavation, bedding, restoration, disinfection, testing, backfill, etc. required to install the specified pipe at the location shown on the plans, or as directed, in accordance with the specifications and standard drawings complete and ready for use. No additional payment will be made for rock excavation. Paid LINEAR FEET (LF)

3. TEES, ANCHORING TEES, BENDS, CROSSES, REDUCERS, AND INCREASERS (ALL SIZES) Includes the specified ductile iron mechanical joint fitting, polyethylene wrap, labor, equipment, excavation, blocking, anchoring, disinfection, backfill, restoration, etc. to install the specified fitting at the locations shown on the plans in accordance with the specifications and standard drawing complete and ready for use. If a restrained joint system is required on the plans, bends, tees, etc. shall be restrained with an approved restraint device system which shall consist of multiple gripping wedges incorporated into a follower gland meeting the applicable requirements of ANSI/AWWA C110/A21.10 (Megalug Series 1100®, MJ Field Lok® or approved equal) Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings. Restrained joints shall be capable of withstanding a maximum joint pressure of 250 psi. unless otherwise noted. Paid EACH (EA) when complete.

4. VALVES (ALL SIZES) Includes the specified resilient seat gate valve for valve sizes of 12" and smaller, and butterfly valves for larger valves, 250 psi working pressure, polyethylene wrap, labor, equipment, excavation, anchoring (if any), valve box and valve stem extensions, backfill, 2'x2'x4" concrete pad (if outside paved or concrete areas), restoration, testing, disinfection, etc. required to install the specified valve at the location shown on the plans in accordance with the specifications and standard drawings complete and ready for use. If required on plans and/or proposed DIP is restrained, valves shall be restrained using mechanical joint restraint devices consisting of multiple gripping wedges incorporated into a follower gland compatible with all mechanical joints (Megalug Series 1100®, MJ Field Lok® or approved equal) Paid EACH (EA) when complete.

4. COPPER SERVICE (ALL SIZES and TYPES) Includes the specified copper service, labor, equipment, excavation, backfill, testing, disinfection, and restoration to install the pipe at the locations shown on the plans or as directed, in accordance with the specifications and standard drawings, complete and ready for use. No additional payment will be made for rock excavation or for bedding required in rock excavation. Paid LINEAR FEET (LF)

5. RECONNECT SERVICE (ALL SIZES) Includes all labor and materials, including fittings, bends, valves, tracing wire jumper necessary to connect service line to the water main and connecting the new service line to existing service line or meter setting. Where the reconnect is made to an existing main this item includes reusing the existing service tap or abandoning the existing service tap by shutting off the curbstop at the existing main and disconnecting the copper service which is being abandoned. Paid EACH (EA) when complete.

6. RELOCATE WATER METERS (ALL SIZES) Includes all labor, equipment, excavation, materials, fittings, disinfection, testing, restoration, etc. to relocate the existing water meter (whatever size exists), meter yoke, meter box, casting, etc. from its old location to the

location shown on the plans or as directed and connect to the existing water service, in accordance with the specifications and standard drawings complete and ready for use. The required new service pipe will be paid under separate bid items. Paid EACH (EA) when complete.

7. TIE-IN TO (ALSO, CONNECT TO) EXISTING MAIN (ALL SIZES) Includes all labor, equipment, excavation, fittings, sleeves, couplings, blocking, anchoring, restoration, disinfection, testing and backfill required to make the tie-in as shown on the plans, and in accordance with the specifications complete and ready for use. Pipe for tie-ins shall be paid under separate bid items and shall be measured thru tie-in fittings. Paid EACH (EA) when complete.

8. FIRE HYDRANT ASSEMBLY Includes all labor, equipment, excavation, materials and backfill to install fire hydrant. The Contractor will supply and install all anchor couplings, bends, fire hydrant extension, concrete blocking, restoration, granular drainage material, etc, needed to install the fire hydrant complete and ready for use as shown on the plans, and in accordance with the specifications and standard drawings. No additional payment will be made for rock excavation. Paid EACH (EA) when complete.

9. REMOVE FIRE HYDRANT Includes all labor, equipment, excavation, backfill, restoration, materials, etc. required to remove the existing fire hydrants as shown on the plans, and in accordance with the specifications and standard drawings of the Northern Kentucky Water District. All removed fire hydrants which are not reused, shall be returned the NKWD. Paid EACH (EA) when complete.

10. PLUG AND BLOCK (ALL SIZES) This item shall include the specified cap or plug and any labor, equipment, excavation, concrete, backfill and restoration required to install the plug and blocking at the location shown on the plans or as directed in accordance with the specifications. Paid EACH (EA) when complete.

11. CUT & CAP EXIST WATER MAIN (ALL SIZES) Includes all labor, equipment, excavation, concrete, restoration, etc. to abandon the existing water main as shown on the plans or as directed, in accordance with the specifications and standard drawings complete and ready for use. Paid EACH (EA) when complete

12. TEMPORARY FLUSHING DEVICE (ALL SIZES) This item shall include the flushing device assembly, copper service line, tapping the main, labor, equipment, excavation, proper backfill and restoration required to install the flushing device at the location shown on the plans and in accordance with the specifications and standard drawings of the Northern Kentucky Water District, complete and ready for use.. Paid EACH (EA) when complete.

Section II
GENERAL INSTRUCTIONS AND SPECIAL NOTES

1. WATER SHUTDOWNS The Contractor after approval by the NKWD's representative shall notify all affected NKWD's customers a minimum of 48 hours prior to interrupting water service. Notification shall be made by the Contractor using the Northern Kentucky Water District "Interruption of Service Notice". All NKWD's customers shall be notified prior to having their water turned-off to have ample time to draw water for use until service is restored. Under no circumstance shall a customer of the NKWD be without water service overnight. Commercial customers may have additional requirement such as temporary water feed, special shut-down times, etc. If water service or existing water system cannot be interrupt during normal daytime hours due to water needs or high demands, the contractor may be required to conduct the work at night or on the weekend. This work is considered an incidental to the project. No active water main shall be shut down without prior approval of Northern Kentucky Water District. Tie-ins on this project may have to be scheduled at night, on weekends or other off peak hours.

2. PROTECTION OF EXISTING UTILITIES The existing utilities shown on the plans are shown as best known at the time the plans were developed and are to be used as a guide only by the Contractor. The Contractor shall use all means at his disposal to accurately locate all affected utilities, whether shown on the plans or not, prior to excavation and protect these utilities during construction. Any damage to existing utilities during construction that are shown or not shown on the plans shall be repaired at the Contractor's expense.

3. STATIONS AND DISTANCES All stations and distances indicated in the plans or specifications are approximate, therefore, some minor adjustment may have to be made during construction to fit actual field conditions.

4. FIRE HYDRANT DISCONNECTION No fire hydrant shall be removed from service without prior approval of Northern Kentucky Water District, and the proper fire authority.

5. RESIDENT ENGINEER "Resident Engineer" as referred to in the specifications or in the plans shall mean the Kentucky Department of Highways Engineer in charge of the project and his inspectors.

6. WATER MAIN INSPECTION Northern Kentucky Water District and their inspectors, and the resident engineer and his inspectors shall be jointly responsible for inspection of water line facilities installation. Where the phrase "as directed" appears in these specifications without defining who is doing the directing, it shall be understood "as directed" means jointly directed by the Resident Engineer and Northern Kentucky Water District

7. PRIOR INSPECTION OF EXISTING METER SETTINGS The Contractor with the Northern Kentucky Water District's inspector shall make an inspection of all meter settings to adjusted or relocated prior to construction. Any meter setting not up to Northern Kentucky Water District standard shall be noted and parts furnished to the Contractor by the Northern Kentucky Water District for installation as needed. Any water meter setting, fire hydrant or any other water facilities that are to be relocated, adjusted, reused or remain and are damaged by the Contractor shall be repaired at the contractors expense. Any old water meter settings removed and not reused shall be turned over to the Northern Kentucky Water District.

8. SPECIAL BACKFILL NOTE No sand or granular material shall be used for backfill above 12” over the top of the pipe or around structures. Only compacted soil or flowable fill shall be used unless approved or otherwise directed by the Resident Engineer. Flowable Fill is required under existing and proposed pavement.

9. GENERAL SAFETY For the security and safety of people in and adjacent to trenches or construction operations, the "Manual of Accident Prevention in Construction" published by the Associated General Contractors Association of America, the "Manual On Uniform Traffic Control Devices" published by the Federal Highway Administration, and the safety regulations of the appropriate state and local agencies shall be followed when specifically applicable, or by similarity of operation or as necessary for adequate protection.

10. MATERIAL HANDLING Pipe, fittings, valves, hydrants, and accessories shall be loaded, unloaded, and handled by lifting with hoists or skidding so as to avoid shock or damage. Under no circumstances shall such materials be dropped. Pipe handled on skidways shall not be skidded or rolled against other pipe.

11. PROTECTION OF PAVEMENT Where main construction is located in or adjacent to pavements, all construction equipment shall have rubber tires. Crawler equipment will be permitted when there is no danger of damaging pavement.

12. NOISE, DUST AND ODOR CONTROL The Contractors construction activities shall b conducted so as to eliminate all unnecessary noise, dust, and odors. The use of oil or other materials, for dust control, which may cause tracking will not be permitted.

13. EXCAVATION AND CONSTRUCTION MATERIALS All excavated material and all construction materials in prosecution of the work shall be deposited so as not to endanger the work, create unnecessary annoyance to the public, or interfere with natural drainage courses. During the course of the work, all material piles shall be kept trimmed up and maintained in a neat, workmanlike manner. All material piles shall be kept a reasonable distance away from roadways so as not to cause a hazard and block the motorists view.

14. PROTECTION OF TREES, SHRUBS, AND OTHER ITEMS TO REMAIN Special care shall be taken by the Contractor to avoid unnecessary damage to trees or shrubs and their root systems or any other items shown to remain. Should the Contractor do unnecessary damage to any item shown to remain, the item shall be repaired or replaced at the contractors expense. Should unnecessary damage be caused to items to remain and is determined not repairable, the Contractor shall compensate the owner for the loss if any.

15. UNACCEPTABLE EXCAVATED TRENCH MATERIAL Any excavated trench material which is determined unacceptable for backfill shall be removed from the area and wasted at a location acquired by the Contractor and approved by the Resident Engineer. Acceptable backfill material shall be acquired by the Contractor at a location approved by the Resident Engineer. The disposition and handling of unacceptable material and the acquisition and handling of acceptable material shall be at the Contractors expense.

16. BLASTING ROCK No blasting of rock shall be performed without specific permission of the Resident Engineer. Blasts shall be properly covered and all utilities and structures in the area shall be properly protected. Warning shall be given to all persons in the area who could be affected by the blasting. Blasting shall be at the risk of the Contractor who shall be liable for all damages to persons or property caused by the blasting. All blasting shall be

performed in accordance with all regulations of the Kentucky Department of Mines and Minerals and all other governing agencies having jurisdiction. The Kentucky Department of Mines and Minerals, area emergency response agencies, utility companies with utilities in the area shall be notified of the blasting sufficiently in advance.

17. ABANDONED VALVES The valve boxes shall be removed from all abandoned valves prior to final roadway paving. This shall be done to the satisfaction of the Engineer. Paving over a valve box without removing same will not be acceptable. No separate payment will be made for removal of valve boxes but shall be considered incidental to water line construction.

18. SALVAGED AND STOCKPILED ITEMS The Contractor shall salvage all items in a workmanlike manner. Any item damaged by the Contractor thru negligence shall be replaced with new items at the contractors expense. All salvaged items to be stockpiled and picked up by NKWD, shall be stored in a safe place until pickup. The Contractor is to notify NKWD at 859-578-9898 when salvaged items are available for pickup.

19. CONSTRUCTION PROCEDURE The successful contractor to prepare construction procedure with respect to the installation of water utilities. The Sequence and Procedure of Water Utilities Construction shall be approved by the Northern Kentucky Water District's Engineering Department prior to the beginning of the water utilities relocations.

Section III
MATERIAL SPECIFICATIONS

1. CONCRETE All concrete shall be Class A in accordance with KYDOH Standard Specs. for Road and Bridge Construction current edition and shall be placed in accordance with same unless otherwise noted. The concrete shall be placed to the dimensions as required in the plans or specifications. Reinforcing steel shall be placed in the concrete as required in the plans or specifications.

2. CONCRETE REINFORCING STEEL All reinforcing steel shall be Grade 40. The size, location, placement, and quantity shall be as required in the plans or specifications.

3. WATER MAIN

   A. **DUCTILE IRON PIPE**. Ductile iron pipe shall meet the requirements of ANSI A21.51 (AWWA C151)

      1. Material. The chemical constituents shall meet the physical property recommendations of ASTM A536 to ensure that the iron is suitable for satisfactory drilling and cutting.

      2. Minimum Thickness. Unless otherwise shown on the plans, the minimum thickness of the barrel of the pipe shall be Class 50. All pipe shall be clearly marked as to class by the manufacturer.

      3. Coating and Lining. The pipe shall be coated outside with a bituminous coating in accordance with ANSI A 21.51 (AWWA C151) and lined inside with cement mortar and seal coated in accordance with ANSI A21.4 (AWWA- C104).

      4. Fittings & Glands. Fittings and glands shall be ductile iron as specified in Section 3A, "Ductile Iron Fittings".

      5. Polyethylene Encasement. Ductile Iron Pipe shall be encased with Polyethylene film conforming to ANSI A21.5 (AWWA C105)

      6. Tracing Wire - All pipe shall be installed with a 12 gauge solid copper (P.V.C coated) tracing wire taped to the top of the pipe every 5'. Maximum tracing wire length shall be 500' without terminating in a curb stop box. Water main installations that stop short of the permanent fire hydrant tee, the tracing wire shall be terminated in a curb stop box. Splices in the tracing wire shall be kept to minimum and approved by the District. If splices are required, they shall be made with copper split bolt (Ilsco #IK-8 or approved equal) and taped with electrical tape. Should the new pipe be fitted to an existing pipe without a tracing wire, the tracing wire shall be terminated in a curb stop box at the point where the transition is made. Curb stop boxes shall not be located in pavement.

   B. **PIPE JOINTS**

      1. Push on and Mechanical. - Push-on and mechanical joints including accessories shall conform to ANSI A21.11 (AWWA-C111). Bolts shall be high strength COR-

10 tee head with hex nuts. The maximum deflection at push-on joints and/or mechanical joints shall be 5 degrees or as recommended by the Manufacturer.

2. Flanged. - Flanged joints shall meet the requirements of ANSI A21.15 (AWWA C115) or ANSI B16.1

a. Gaskets. All flanged joints shall be furnished with 1/16 inch thick full face red rubber.
b. Bolts. Bolts shall have American Standard heavy unfinished hexagonal head and nut dimensions all a specified in ANSI B18.2. For bolts of 1-3/4 inches in diameter and larger, bolt studs with a nut on each end are recommended. Material for bolts and nuts shall conform to ASTM A307, Grade B.

3. Restrained. - If restrained joint system is required on the plans, all pipes, bends, valves, etc. shall be restrained. Special restrained pipe gaskets which develop a wedging action between pairs of high-strength stainless steel elements spaced around the gasket (Field Lok®, Fast-Grip® or approved equal gaskets). Specified ductile iron mechanical joint fitting shall be restrained using mechanical joint restraint devices consisting of multiple gripping wedges incorporated into a follower gland compatible with all mechanical joints (Megalug Series 1100®, MJ Field Lok® or approved equal). Gland body, wedges and wedge actuating components shall be cast from 65-45-12 ductile iron and shall have a working pressure of 250 psi

4. FITTINGS

A. DUCTILE IRON FITTINGS. Ductile Iron Compact Fittings and accessories shall conform to AWWA C153 and Full Body Fittings - and accessories to AWWA C110. Bolts and nuts shall be high strength, corrosion resistant alloy, such as "Cor-Ten" or approved equal.

1. Working Pressures. All fittings and accessories shall be Ductile Iron, rated for a minimum of 200 psi working pressure or as specified herein. The fittings and accessories shall be new and unused. (NOTE: Certain areas of the District's service area require materials used, to be of a higher working pressure than 200 psi.)

2. Coating and Lining. The fittings shall be coated outside with a bituminous coating in accordance with ANSI A21.10 (AWWA C110) and lined inside with cement mortar and seal coated in accordance with ANSI A21.4 (AWWA C104).

3. Fittings and Glands. All pipe fittings shall be mechanical joint fittings. Mechanical joints shall conform to AWWA C111.

4. Polyethylene Encasement. Ductile Iron Fittings shall be encased with polyethylene film conforming to ANSI A21.5 (AWWA C105)

B. JOINTS

1. Mechanical. Mechanical joints including accessories shall conform to ANSI A21.11 (AWWA C111). Glands shall be ductile iron. Bolts shall be high strength COR-10 tee head with hex nuts.

2. Flanged. Flanged joints shall meet the requirements of ANSI A21.15 (AWWA C115) OR ANSI B16.1 and be used with the express approval of the Engineer.

   a. Gaskets. All flanged joints shall be furnished with 1/16 inch thick full face red rubber.

   b. Bolts. Bolts shall be stainless steel and have American Standard heavy unfinished hexagonal head and nut dimensions all a specified in ANSI B18.2. For bolts of 1-3/4 inches in diameter and larger, bolt studs with a nut on each end are recommended. Material for bolts and nuts shall conform to ASTM A307, Grade B.

3. Restrained. If restrained joints is shown on the plans, all pipe, bends, valves, etc. shall be restrained.

   a. Bell and Spigot. Bell and spigot joints shall conform to ANSI A21.6.

5. POLYETHYLENE WRAP

All ductile iron pipe, fittings, valves, and fire hydrant leads shall be polyethylene wrapped, installed according to the current edition of AWWA C105. Ductile iron fittings, valves, and fire hydrant leads used in the installation of P.V.C. pipe shall be included.

A. Material. Polyethylene wrap shall be a minimum of 8-mil polyethylene tube.

B. Installation. The contractor shall cut the roll in tubes 2 feet longer than a standard length of pipe. Each tube shall be slipped over the length of pipe, centering to allow a 1' overlap on each adjacent pipe section. After the lap is made, slack in the tubing shall be taken up for a snug fit and the overlay shall be secured with polyethylene tape.

Pipe shall not be wrapped and stored on site for any period of time, but wrapped and immediately placed in the trench, fittings shall be wrapped prior to installing blocking or pads. (see Standard Drawing #104) Polyvinyl chloride pipe requires no wrap. Odd shaped appurtenances such as valves, tees, fittings, and other ferrous metal pipeline appurtenances shall be wrapped by using a flat sheet of polyethylene. Wrapping shall be done by placing the sheet under the appliances and bringing the edges together, folding twice, and taping down.

6. FIRE HYDRANTS

A. DESCRIPTION. The Contractor shall provide all labor, materials, tools, and equipment required to furnish and install in good workmanlike manner all fire hydrants complete and ready for service where shown on the plans or where directed by the Engineer and as specified herein.

B. FIRE HYDRANTS. Fire hydrants shall conform to AWWA C502. Hydrants shall conform to the standards of the Northern Kentucky Water District as SHOWN on the plans. All fire hydrants shall have auxiliary valves for isolating water flow to the hydrant. All fire hydrants and auxiliary valves shall be positively locked to the water main by restrained joints, hydrant adapters, or other approved method.

Hydrants shall be designed to 200 psi working pressure and shall be shop tested to 300 psi hydrostatic pressure with the main valve both open and closed. The barrel shall have a breakable safety section and/or base bolts just above the ground line. Hydrants shall have a main valve opening of 5 1/4 inches, a 6 inch mechanical joint inlet to be suitable for setting in a trench 1,000 mm (3' 6") deep minimum, and shall be the traffic style hydrant so that the main valve remains closed when the barrel is broken off. Hydrants shall have a dry top and shall be self draining, when the main valve is closed. Self draining hydrants shall drain to dry wells provided exclusively for that purpose. Hydrant drains shall not be connected to storm or sanitary sewers. Hydrants located generally in the Covington System and other areas determined by the Engineer (flood zones) shall have all drain holes plugged prior to installation. Hydrants shall be rotatable in a minimum of eight (8) position in 360 degrees. All hydrants shall have two (2)- two and one half (2 1/2) inch hose nozzles and one (1) steamer or pumper connection threaded to conform to Northern Kentucky Water District Standards: steamer nozzle shall be National Standard Thread and 2 1/2" outlets shall be Northern Kentucky Water District Standard Thread (Old Cincinnati Thread). The operating nut and the nuts of the nozzle caps shall be square in shape, measuring one (1) inch from side to side. Hydrant body shall be painted yellow for areas designed for 150 psi working pressure and red for areas in excess of 150 psi. Hydrants used in areas in excess of 150 psi working pressure shall be designed to operate at the higher pressures and shall have independent operating valves on each 2 1/2" outlet.

All hydrants shall be right hand open, clockwise, except in certain areas of Campbell Co. as specified in Standard Drawings and shall have a direction arrow of operation cast into the dome of the hydrant. Installation per Standard Drawing #109.

C. INSTALLATION. The installation of fire hydrants shall be in conformance with "Mains Installation" section, paragraph "Setting Hydrants".

D. Polyethylene Encasement Fire hydrant tee, anchoring pipe and part of the fire hydrant shoe shall be encased with Polyethylene film conforming to ANSI A21.5 (AWWA C105). .(See Standard Drawing #109)

7. VALVES

A. DESCRIPTION. The Contractor shall provide all labor, materials, tools, and equipment required to furnish and install in good workmanlike manner all valves and accessories complete and ready for service where shown on the plans or where directed by the Engineer and as specified herein.

B. GATE VALVES. Gate valves shall conform to AWWA C509 and shall be cast iron or ductile body, resilient wedge, non-rising stem with rubber "O" ring packing seals. All external dome and packing bolts shall be stainless steel. The valves shall open by turning counter-clockwise. All valves shall have openings through the body of the same circular area as that of the pipe to which they are attached. Valves shall have mechanical joint ends unless otherwise shown on the plans or directed by the District. All valves shall be designed for a working pressure of 250 pounds per square inch (PSI) unless otherwise noted on the plans or in the "Supplemental Specifications". An extension stem shall be furnished if required, to bring the operating nut within 3-1/2 feet of finished grade. Extension stems shall be securely fastened to the valve stem. The

Contractor shall make all valves tight under their working pressures after they have been placed and before the main is placed in operation.

C. TAPPING SLEEVES AND VALVES. Tapping sleeves and valves shall be designed for a working pressure of 250 psi. The tapping sleeve together with the tapping valve shall be tested at 250 psi for visible leakage and pressure drop before the main is tapped. Tapping sleeve and valve used in high pressure areas shall be tested at 350 psi.

1. Tapping Sleeves Tapping sleeves shall be two piece with mechanical joint type ends, and be so designed as to assure uniform gasket pressure and permit centering of the sleeve on the pipe.

2. Tapping Valves Tapping valves shall have a flange on one end for bolting to the tapping sleeve and a mechanical joint type end connection on the outlet with slotted standard flange or other adapters for connection to the tapping machine. All external dome , flange and packing bolts shall be stainless steel. The valves shall open by turning counterclockwise. Tapping valves shall conform to AWWA C509.

D. VALVE BOXES All valves shall be provided with valve boxes. Valve boxes shall be of standard, adjustable, heavy duty cast iron extension type, two piece, 5 1/4 inch shaft, screw type, and of such length as necessary to extend from valve to finished grade, Tyler #562-S, Tyler #564-S or approved equal. Valve box cover shall be stamped "Water". Tops shall be set at final established grade.

E. BUTTERFLY VALVES. Unless otherwise specified valves 16 inches and larger shall be butterfly valves rated at 250 psi working pressure and conform to the applicable portions of AWWA Standard C504, latest edition.

1. Body - The valves shall be AWWA Class 250B designed for tight shut-off against a differential pressure of 250 psi. Valve bodies shall be constructed of ductile iron. Two trunnions for shaft bearing shall be integral with the valve body. The valves and appurtenances shall be suitable for buried service.

2. Ends - Valves shall have mechanical joint ends and shall be furnished with high strength COR-10 tee head with hex nuts, ductile iron glands, and rubber gaskets for each mechanical joint end.

3. Discs - Valve discs of cast steel, fabricated steel, or cast bronze are not acceptable.

4. Seats - Seats bonded on the discs are not acceptable.

5. Shaft Seals - If stuffing boxes are utilized for shaft seals they shall be constructed of cast iron, ASTM A126. Gland assemblies shall be of cast bronze, ASTM B132. The packing gland shall be housed in a solid walled cast iron, ASTM A48, Class 40 one piece structure or equal.

6. Operators - The valve operating mechanism shall be for counterclockwise opening. There shall be no external moving parts on valve or operator except the operator input shaft. Input shaft is to be operated by a 2 inch square operating nut. Maximum required input force on the operator shaft to open and close the valve shall be 40 pounds. The total number of turns applied to the operating nut required

to completely open the valve from a completely closed position shall not be less than twice the normal valve diameter. An extension stem shall be furnished to bring the operating nut within 3 1/2 feet of the finished grade. Extension stems shall be securely fastened to the valve stem.

E. VALVE BOXES All valves shall be provided with valve boxes. Valve boxes shall be of standard, adjustable, heavy duty cast iron extension type, two piece, 5 1/4 inch shaft, screw type, and of such length as necessary to extend from valve to finished grade, Tyler #562-S, Tyler #564-S or approved equal. Valve box cover shall be stamped "Water". Tops shall be set at final established grade.

F. AIR RELEASE AND VACUUM VALVES. Air release valves shall be constructed at high points in the water line as indicated on the plans. These valves shall permit the air in the pipeline to escape as the pipe line fills and allows the air to re-enter as the line empties. These valves shall be APCO Air Release Valves Model #200-A, 250 psi working pressure, 1", cast iron body and cover. 16" and larger water mains shall be a 2" air release valve and curb stop. Refer to Standard Drawing #106 for reference.

8. **STEEL CASING PIPE**

Casing pipe shall be steel pipe with a minimum yield strength of 35,000 psi with a minimum wall thickness as listed below:

Nominal Diameter Casing Pipe	Normal Wall Thickness	Nominal Diameter Casing Pipe	Normal Wall Thickness
Under 350 mm (14")	0.251"	650 mm (26")	0.438"
350 & 400 mm(14"&16")	0.282"	700 & 750 mm(28"&30")	0.469"
450 mm (18")	0.313"	800 mm (32")	0.501"
500 mm (20")	0.344"	850 & 900 mm(34"&36")	0.532"
550 mm (22")	0.375"	950 – 1050mm(38,40&42")	0.563"
600 mm (24")	0.407"	1200 mm (48")	0.626"

The inside diameter of the casing pipe shall be at least 100 mm (4") greater than the outside diameter of the carrier pipe joints. Steel casing sections shall be connected by welding, conforming to AWWA C206.

Adequate pipe spacers shall be installed to ensure that the carrier pipe is adequately supported in the center of the casing pipe throughout it's length, particularly at the ends. There shall not be any metallic contact between the casing and carrier pipe. Casing shall be backfilled with pea gravel or sand after the carrier pipe is installed to prevent pipe movement. Casings shall have both ends sealed up in such a way as to prevent the entrance of foreign material. See Standard Drawing #104 for installation details.

9. **MATERIAL APPROVAL** Material certification and test samples shall be provided by the Contractor, at the contractors expense, as required by Northern Kentucky Water District and the Kentucky Department of Highways. No material shall be used until approved. All rejected material be removed from the project and approved material acquired by the Contractor at the Contractor's expense.

10. **PAVING MATERIALS FOR REPLACEMENT IN KIND** All materials for replacement in kind of streets, sidewalks, curbs, walls etc. shall meet the requirements of the applicable sections of KYDOH Standard Specifications For Road And Bridge Construction.

11. **FLOWABLE FILL** This material shall meet the requirements of SPECIAL NOTE 7X of the Kentucky Department of Highways' Standard Specifications for Road and Bridge Construction.

Section IV
CONSTRUCTION

A. GENERAL Installation of water mains and appurtenances shall conform to the latest edition of AWWA Standard C600 for D.I.P.

Water main pipe and fittings shall be laid on a good level foundation with no gaps or humps under the pipe or fittings. Excavation shall be done by hand at joints to prevent the pipe and fittings from being supported by the mechanical joint or slip joint bell. Pipe shall be laid with the bell ends facing in the direction of laying.

The interior of the pipe shall be thoroughly cleaned of foreign matter before being lowered into the trench and shall be kept clean during laying operations. ALL OPEN ENDS ARE TO BE CLOSED WITH CAPS OR PLUGS AT ALL TIMES WHEN PIPE LAYING OPERATIONS ARE NOT IN OPERATION AND AT THE END OF THE DAY. All caps or plugs shall be properly installed and blocked in advance of filling, flushing, and testing mains. All securing and blocking shall be inspected by the Engineer prior to backfilling of ditch.

B. HANDLING. Pipe, fittings, valves, hydrants and accessories shall be loaded and unloaded by lifting with hoists or skidding so as to avoid damage. Under no circumstances shall such materials be dropped. Pipe handled on skidways shall not be skidded or rolled against other pipe. Pipe hooks that extend inside the ends of the pipe shall not be used for handling the pipe since they could damage the lining. Under no circumstances shall such materials be dropped. The interior of all pipe, fittings and other accessories shall be kept free from dirt and foreign material at all times. When handling P.V.C. pipe care should be taken to avoid abrasion damage, gouging of the pipe, rocks, and any stressing of the bell joints or damage of the bevel ends.

C. TREE REMOVAL. Stumps of trees designated for removal 12" in diameter and smaller shall be physically removed. Any stump larger than 12" shall be ground down to 6" below final grade level.

D. DEWATERING. Should water be encountered, the Contractor shall furnish and operate suitable pumping equipment of such capacity adequate to dewater the trench. The trench shall be sufficiently dewatered so that the laying and joining of the pipe is made in the dry. The Contractor shall convey all trench water to a natural drainage channel or storm sewer without causing any property damage.

E. CONSTRUCTION EQUIPMENT. Where mains are located in or adjacent to pavements, all backfilling and material handling equipment shall have rubber tires. Crawler equipment shall be permitted when there is no danger of damaging pavement.

F. TRENCH SUPPORT. Supporting open cuts for mains shall be the responsibility of the Contractor where trenching may cause unnecessary damage to street pavement, trees, structures, poles, utilities, or other private or public property. During the progress of the work, whenever and wherever it is necessary, the Contractor shall, at his expense, support the sides of the excavation by adequate and suitable sheeting, shoring, bracing, or other approved means. Such trench support material and equipment shall remain in place until backfilling operations have progressed to the point where the supports may be withdrawn without endangering property.

G. NOISE DUST AND ODOR CONTROL. The Contractor's construction activities shall be conducted so as to eliminate all unnecessary noise, dust and odors.

H. DISINFECTION AND LEAKAGE TESTING. See Section "Disinfection and Leakage Testing."

I. TRENCH EXCAVATION AND BOTTOM PREPARATION.

1. General. The Contractor shall perform all excavation of every description and of whatever substances encountered to the depths indicated on the drawings or as otherwise specified. During excavation material suitable for backfilling shall be piled in an orderly manner a sufficient distance form the banks of the trench to avoid overloading and to prevent slides or cave-ins. All excavated materials not required or suitable for backfill shall be removed and wasted at a site acquired by the Contractor and approved by the Engineer. Topsoil shall be stripped from the excavation area before excavation begins.

   Such grading shall be done as may be required to prevent surface water from flowing into trenches or other excavations, and any water accumulating therein shall be removed by pumping or other approved methods. The trench shall be sufficiently dewatered so that the laying and joining of pipe is made in the dry. The Contractor shall take whatever action necessary to insure that water pumped from the trench will not damage private property. If necessary the Contractor shall haul trench water to another suitable location for disposal.

   Such sheeting and shoring shall be furnished and installed by the Contractor, at his own expense, as may be necessary for the protection of the work, protection of other utilities, protection of structures, the safety of the personnel, and the safety of the public. All shoring shall be removed when the work is completed unless directed otherwise by the Engineer. The Contractor shall also furnish whatever barricades or fencing necessary to provide for the safety of pedestrians in excavation areas and for traffic control as discussed in other sections. All open trenches shall be adequately covered, barricaded and/or backfilled during non-working hours in order to adequately protect vehicular and pedestrian traffic.

   The Contractor shall excavate whatever material encountered. Trenches shall be excavated to the widths shown in the table headed "Trench Width" or as otherwise indicated in the plans, and the banks shall be as nearly vertical as practicable. The bottom of the trenches shall be accurately graded to provide uniform bearing and support for each section of the pipe or conduit on undisturbed soil at every point along its entire length, except for bell holes and for the proper sealing of the pipe joints. Bell holes and depressions in order that the pipe rest upon the prepared bottom for as nearly its full length as practicable, shall be only of such length, depth, and width as required for properly making the particular type of joint. Additional depth shall be excavated in rock as described elsewhere herein.

   Except in cases where the elevations of the water lines are indicated on the plans, trenches for water line shall be of a depth that will provide a minimum cover over the top of the pipe of 36 inches from the indicated finished grade, and avoid interference of the water lines with other existing or proposed utilities. Where the note occurs, "Slope to Drain", the Contractor shall manage to keep a positive slope in that direction in order that

air may travel to the air vent. Where paved surfaces are to be disturbed by an open cut, the Contractor shall provide suitable machinery to cut the edges of the pavement in a smooth straight line.

2. Rock The word "rock" wherever used as the name of an excavated material, shall mean boulders and solid masonry larger than 1/2 cubic yard in volume, or solid ledge rock and masonry which, in the opinion of the Engineer, requires for its removal, drilling and blasting, wedging, sledging, barring, or breaking up with a power operated hand tool. Any material which can be excavated using a hand pick and shovel, power operated excavator, power operated backhoe or power operated shovel shall not be defined as rock.

3. Blasting Rock. No blasting of rock shall be done within 40 feet of pipes or structures without specific permission from the Engineer. Blasts shall be properly covered and the pipe or structure properly protected. Warnings shall be given to all persons in the immediate vicinity. Blasting shall be at the risk of the Contractor who shall be liable for all damages to persons or property. Necessary permits shall be secured and paid for by the Contractor.

4. Trench Width. Widths of trenches shall be held to a minimum to accommodate the pipe and appurtenances. The trench width shall be measured at the top of the pipe barrel and shall conform to the following limits:

Earth

a. Minimum - outside diameter of the pipe barrel plus 8 inches, 4 inches each side of pipe.
Maximum - nominal pipe diameter plus 24 inches.

Rock

Minimum – 24" or less, nominal pipe size: outside diameter of pipe barrel plus 12”, @ 6” each side.
Minimum - Larger than 24", nominal pipe size: outside diameter of pipe barrel plus 18”, @ 9” each side.
Maximum - nominal pipe diameter plus 24”.

b. Butterfly Valves. Trench width shall be over excavated 24" on the side that the operating mechanism is located on the butterfly valve when the surrounding area cannot be hand dug.

c. Structures. The minimum excavation limits for structures shall be as indicated. In rock, the excavation limits shall not exceed 12 inches from the outside wall and 6 inches below the footer.

5. Excessive Trench Width. If, for any reason the trench width exceeds the maximum trench width defined in paragraph "Trench Width", the Contractor, subject to approval of the Engineer, shall provide compacted stone bedding, additional strength pipe or concrete encasement, at the contractor expense.

6. Bottom Preparation The Contractor shall use excavation equipment that produces an even foundation. For the entire length of the trench, a compacted layer of sand or bankrun bedding material shall be installed below the pipe. Bell holes and depressions

for joints, valves, and fittings shall be dug after the trench bedding has been graded in order that the pipe rest upon the prepared bedding for as nearly its full length as practicable. Bell holes and depressions shall be only of such length, depth, and width as required for properly making the particular type of joint.

a. Earth. The trench shall be excavated to the depth required, so as to provide a uniform and continuous bearing and support for the pipe barrel. A minimum of 3" sand shall be installed on the solid and undisturbed ground. The finished trench bottom shall be accurately prepared by means of hand tools.

b. Rock. Where excavation is made in rock or boulder, the trench shall be excavated 6 inches below the pipe barrel for pipe 24 inches in diameter or less, and inches for pipe larger than 24 inches in diameter. All loose material shall be removed from the trench bottom. After preparation of the trench bottom, a pipe bed shall be prepared using sand and thoroughly compacted. The bedding material shall be spread the full width of the trench bottom.

7. Water Main Depth. Mains 12" and less in size shall be not less than 36" in depth and no more than 48" in depth, unless otherwise specified. Mains larger than 12" shall be installed as shown on the plans.

8. Excessive Trench Depth. If, for any reason, the trench depth exceeds the trench depth shown on the Plans, the Contractor is responsible for any and all additional cost incurred for the excessive depth.

9. Foundation. The mains are to be built on a good foundation. If, in the Engineer's opinion, the material forming the trench bottom is not suitable for a good foundation, a further depth shall be excavated and the same filled with suitable material. Unauthorized excavation below the trench bottom shall be filled with compacted crushed stone at the Contractor expense.

J. PIPE, VALVE AND HYDRANT INSTALLATION The provisions of AWWA C600 shall apply in addition to the following:

1. Pipe shall not be laid in water or when trench or weather conditions are unsuitable for the work except when permitted by the Engineer. Unless otherwise indicated in the plans or in Section I, Bid Item Explanations, the material shall be new and unused. The interior of the pipe shall be thoroughly cleaned of foreign matter before being lowered into the trench and shall be kept clean during laying operations by plugging or other approved methods. Pipe shall be laid with bell ends facing in the direction of laying, unless otherwise directed by the Engineer. After placing a length of pipe in the trench, the spigot end shall be centered in the bell of the pipe and forced home. All pipe shall be laid with ends abutting and true to line and grade. Deflection of pipe joints in excess of the manufacturer's recommendations will not be permitted. A watertight pipe plug or bulkhead shall be provided and used to prevent the entrance of foreign material whenever pipe laying operations are not in progress. Any pipe that has the grade or joint disturbed after laying shall be taken up and relayed. Any section of pipe found to be defective before of after laying shall be removed and replaced at the Contractor's expense.

2. Pipe Cutting. The cutting of pipe for installing valves, fittings, or hydrants shall be done in a neat and workmanlike manner without damage to the pipe or lining. The end shall be

smooth and at right angles to the axis of the pipe. Flame cutting of metal pipe by means of an oxyacetylene torch shall not be permitted. All pipe cutting shall be at the Contractor's expense.

3. Push-On Joints. The surfaces with which the rubber gaskets comes in contact shall be thoroughly cleaned just prior to assembly. The gasket shall then be inserted into the groove in the bell. Before starting joint assembly, a liberal coating of special lubricant shall be applied to the spigot end. (Special lubricant shall be suitable for use in potable water) With the spigot end centered in the bell, the spigot end is pushed home.

4. Mechanical Joints. Mechanical joints require that the spigot be centrally located in the bell. The surfaces with which the rubber gasket comes in contact shall be thoroughly cleaned just prior to assembly. The clean surfaces shall be brushed with a special lubricant just prior to slipping the gasket over the spigot end and into the bell. (Special lubricant shall be suitable for use in potable water) The lubricant shall also be brushed over the gasket prior to installation to remove the loose dirt and lubricate the gasket as it is forced into its retaining space. P.V.C. pipe spigot ends shall be field cut smooth and at right angles to the axis of the pipe for installation in mechanical joint fittings.
   1. Bolt Torque The normal range of bolt torque to be applied to standard cast iron bolts in a joint are:

Size	Range of Torque in foot-pounds
5/8"	40 - 60
3/4"	60 - 90
1"	70 - 100
1-1/4"	90 - 120

5. Restrained Joints

   a. Ball and Socket. Ball and Socket joints shall be assembled and installed according to the manufacturers recommendations. The joint shall be thoroughly cleaned and lubricated. Check the retainer ring fastener. After installation, all slack shall be taken out of the pipe joint.

   b. Push-On. Assemble and install the push-on joint according to the manufacturer's recommendations. Restrained joint-type pipe and fittings shall only be used as approval by the Engineer. Retaining glands, field lock gaskets, or retaining flanges shall not be considered as providing a restrained joint. The joint shall be thoroughly cleaned and lubricated. Check the retainer ring fastener. After installation, all slack shall be taken out of the pipe joint.

6. Setting Valves. Valves shall be set on a firm solid concrete block foundation so that no load will be transferred to the connecting pipe. Valves in water mains shall, where possible, be located on the street property lines extended, unless otherwise shown on the plans. A valve box shall be provided for every valve. The valve box shall not transmit shock or stress to the valve and shall be centered and plumb over the operating nut of the valve. The box cover shall be set flush with the surface of the finished pavement unless otherwise shown. All valves boxes with the exception of isolating valves for fire hydrants that are located in non-paved areas shall have a minimum of 2'x2'x4" concrete pad as shown in Standard Drawing No. 105.

7. Setting Hydrants. Hydrants shall be located as shown on the plans or as directed by the Engineer. The location shall provide complete accessibility and minimize the possibility of damage from vehicles or injury to pedestrians. All hydrants shall stand plumb with the pumper nozzle facing the curb. Hydrant shall be set to the established grade, with the traffic flange within 100 mm (4") above final grade in accordance to Standard Drawing No. 109. Each hydrant shall be controlled by an independent gate valve with valve box. All valves used for hydrant control shall be anchored to the branch tee.

8. Thrust Blocking. All bends over five (5) degrees, plugs, caps, and tees shall be securely blocked against movement with concrete thrust blocks placed against undisturbed earth in accordance with Standard Drawing No. 104. Thrust blocks shall be approved by the Engineer prior to backfilling. Water mains shall have concrete thrust block at all pipe intersections and changes of direction to resist forces acting on the pipeline. All concrete thrust blocks shall be poured in such a manner that the bolts can be replaced without disturbing the blocking.

   All caps or plugs used in mains to undergo hydrostatic test shall be properly installed and blocked in advance of testing mains. All caps or plug installations shall be approved by the Engineer's representative before the main is subjected to the pressure test.

   a. Concrete Blocking. Concrete blocking shall be K.D.O.T. Class A concrete as specified in Section "Concrete". Blocking shall be placed between undisturbed ground and the fitting to be anchored. The area of bearing on the fitting and on the ground in each instance shall be that shown herein. The blocking shall, unless otherwise shown, be so placed that the pipe and fitting joints will be accessible for repair.

   b. Tie Rods. If shown or specified, movement shall be prevented by attaching suitable metal rods, clamps or restrained fittings. Steel tie rods or clamps, where permitted, shall be of adequate strength to prevent movement. Steel tie rods or clamps shall be painted with three coats of an approved bituminous paint or coal tar enamel. A minimum of 3/4" welded eye bolts @ a 90 degree bend and 3/4" threaded rods may only be used with the approval of the Engineer for temporary restraint only. Duc-Lucs are prohibited for use.

   c. Restrained Fittings. Restrained fittings, where permitted, shall be subject to the approval of the Engineer.

K. TRENCH BACKFILL

All trench backfill shall be free from cinders, refuse, organic material, boulders, rocks or other material which in the opinion of the Engineer is unsuitable. No backfill shall be made with frozen material.

1. BACKFILL

   a. Trench Bottom Preparation. The pipe shall be bedded on sand to achieve full pipe barrel support. In any event not less than 3" of sand bedding shall be used.

   b. Backfill to 12" Over Pipe Barrel. All trench excavations shall be backfilled immediately after pipe is laid with the exception of thrust blocks. Compacted sand shall be used to backfill the trench from the bottom of the pipe barrel to the 12" over the pipe barrel. No

flushing of backfill shall be permitted to achieve compaction. Clay bulkheads shall be installed as specified under Bulkheads Section.

c. Remaining Trench Backfill in Non-Roadway Pavement Areas. From 12" above the pipe barrel to the surface, excavated trench material or flowable fill may be used as backfill material. No material shall be used for backfill that contains frozen earth, vegetation or organic material, debris, rocks 8" or larger measured in any direction, or earth with an exceptionally high void content.

d. Compaction. All backfill shall be placed in uniform loose layers, not to exceed 12" layers, and each layer shall be compacted to a density not less than 95 percent of the standard Proctor maximum dry density (ASTM D698). The backfill shall be compacted in such a manner and with appropriate equipment so that there is no pipe damage, pipe misalignment or damage to joints. No flushing of backfill shall be permitted to achieve compaction.

e. Bulkheads. When a granular bedding is provided in rock or when granular backfill is used, the Contractor shall place bulkheads of clay soil across the trench at 100' intervals to resist the movement of groundwater through the granular material. Such bulkheads shall be carefully compacted and shall extend approximately 3 feet in a direction parallel to the pipe and shall extend from the bottom of the trench to a point 4" below final grade level.

f. Remaining Trench Backfill in Roadway Pavement Areas. From 12" above the pipe barrel to subgrade, flowable fill is required as backfill material. Flowable fill shall be per Ky. Department of Highways Standard Specifications for Road and Bridge Construction.

g. Surface Conditions. The trench surface shall be periodically attended to during the course of the contract. The trench surface shall be maintained in a safe condition and shall not interfere with natural drainage.

L. INSTALLATION OF PIPE BY BORING OR JACKING. At certain locations where designated on the plans, the Contractor will be required to install pipe under paved areas or other obstacles by boring a hole large enough to pull the pipe through without obstructing the designated area, or by jacking, whichever is the most feasible.

M. WATER METERS Water Meters shall be installed at locations shown on the plans. The meter shall be constructed per NKWD Standard Drawings.

N. CONNECTIONS (TIE-INS) TO EXISTING WATER LINES All connections to existing water lines shall be made at location shown on the plans. Care shall be taken in each case that none of the sterilizing water may enter the system during the sterilizing operation. Each connection shall be preceded with a one inch corporation stop and drain to allow bleeding of the water line of air and sterilizing water. This corporation stop shall be furnished and installed at the Contractor's expense. All sections of pipe and appurtenances to be used for tie-ins and not sterilized, shall be thoroughly cleaned by scrubbing with a chlorine solution prior to installation. All tie-ins of mains shall be done with transitional or straight solid sleeves. Mains shall be flushed of sterilizing water before tie-ins to existing mains are made.

O. INSTALLATION OF SERVICE LINES Service line shall be installed as shown on the plans or as directed. The Contractor shall excavate whatever material encountered. The service lines shall be installed using boring and jacking or open cut (as specified on the plans) at the depth required to clear existing and proposed sewers, but in no case shall the line be installed with less than 36" cover from final grade. The trench width shall be as excavated to a maximum of 2'. The line shall be laid on firm soil. In rock, sufficient extra depth shall be excavated and refilled with acceptable compacted soil or bedding sand to provide a cushion for the elimination of the possibility of crushing or perforating the pipe. Connections shall be made using normal practices for water line installation and in accordance with the standards in the plans or contained herein. Backfill shall meet the same requirements as that described in PIPE TRENCH BACKFILL.

P. TEMPORARY SERVICE CONNECTIONS Contractor shall furnish, install, make connections, and maintain all temporary lines and other appurtenances necessary to run temporary service connections as needed to permit construction. All temporary service pipes crossing streets, commercial driveways, and/or wheelchair ramps must be buried to prevent a traffic/pedestrian hazard.

The pipe, hoses and other materials furnished by the Contractor for use as temporary service pipe, shall be clean, water-tight and fully adequate to withstand existing pressures and all other conditions of use.. Care shall be exercised throughout the installation of all temporary pipe and service fittings to avoid any possible contamination of any mains or house services or contamination of the temporary pipe proper. Contractor must disinfect all temporary line. All temporary lines must be flushed before being hooked to service line.

The Contractor shall be responsible for the regularly testing and recording the chlorine level of the temporary lines. If low levels are encountered, the Contractor shall be responsible for flushing the line to get levels into standard. The Contractor shall perform all connecting and disconnecting of temporary bypass to consumers' services and all back clearing of service lines.

The Contractor shall maintain the temporary water service line in safe and operative condition at all times. Any temporary bypass lines or services crossing a sidewalk or driveway shall be temporarily covered with a rubber ramp provided by the Contractor or bituminous cold patch, compacted by a roller or a mechanical compaction device, provided by the Contractor. Ramping method must be approved by the District prior to use. The Contractor shall be responsible for the maintenance of the temporary ramping method and any damage as a result there-of.

Q. **APPLICABLE SPECIFICATIONS & STANDARDS**

The following specifications and standards form a part of these Specification:

A. **American Water Works Association** (AWWA) Standards
B. **Northern Kentucky Water District** Standards Drawing & Specifications – current edition
C. "Manual of Accident Prevention in Construction" published by the **Associated General contractors of America**
D. **Kentucky Occupational Safety and Health Administration's** "Kentucky Occupational Safety and Health Standards for General Industry" current edition.
E. **American National Standards Institute** (ANSI)
F. **American Society for Testing & Materials** (ASTM)

G. **Kentucky Division of Water Quality**
H. **"Recommended Standards for Water Works"** current edition

Section V
DISINFECTION AND LEAKAGE TEST

A. SCOPE. This section covers the disinfection of the new water mains, fittings, temporary services and associated appurtenances. The Contractor shall provide all labor, materials, tools, equipment, and incidentals required to test the mains for watertightness and disinfect the mains as directed by the District and as specified herein. Gauges for the test shall be furnished by the Contractor.

B. TEST SECTION. After the main has been installed and backfilled all newly installed pipe or any valved section thereof shall be considered a test section.

C. WITNESS. All tests performed for each test section shall be witnessed and approved by the District before acceptance. In the event the Contractor performs any test without witness by the District, the Contractor will be required to test the section again in conformance with this specification at no cost to the District.

D. GENERAL. All disinfection work shall conform to the requirements of the latest revision of ANSI/AWWA C651 and the requirements of the Kentucky Division of Water. If any State requirements conflict with the provisions of this section, the State requirements shall govern.

Water required for flushing and disinfection work will be provided as stipulated in the temporary facilities.

When it is necessary to interrupt service to water customers, each customer affected shall be notified in advance of the proposed service interruption and its probable duration in accordance with the project requirements.

E. DISINFECTION PROCEDURE. During construction or after the installation of the pipe and fittings is complete, an approved disinfection method, according to governing standards, shall be used. The disinfection solution shall be allowed to stand in the main and associated appurtenances for a period of at least twenty-four (24) hours.

During disinfection, all valves, hydrants, and service line connections shall be operated to ensure that all appurtenances are disinfected. Valves shall be manipulated in such a manner that the strong disinfection solution in the main from flowing back into the supply line. Check valves shall be used if required.

All non-disinfected fittings used for tie-ins or repairs shall be cleaned and swabbed with a liquid sodium hypochlorite disinfecting solution prior to installation.

F. FINAL FLUSHING. Upon completion of chlorination but before sampling and bacteriological testing, Contractor shall remove all heavily chlorinated water from the main and temporary services by flushing with potable water at the maximum velocity which can be developed under the direction and control of the District.

The Contractor shall properly neutralize and dispose of the chlorinated water and flushing water in accordance with all applicable regulations. Contractor shall obtain all special waste disposal permits necessary.

G. DISPOSAL OF HEAVILY CHLORINATED WATER. Contractor shall apply a de-chlorinating agent to the water to be wasted to neutralize thoroughly the chlorine residual remaining in the water. (See the following table for neutralizing chemicals.) Federal, state, and local regulatory agencies should be contacted to determine special provisions for disposal of heavily chlorinated water.

Chlorine residual of water being disposed of shall be de-chlorinated by treating with one of the chemicals listed in the following table:

Pounds of Chemicals Required to De-chlorinate Various Residual Chlorine Concentrations in 100,000 Gallons of Water*

Residual Chlorine Concentration *mg/L*	Sulfur Dioxide (SO2)	Sodium Bisulfate (NaHSO3)	Sodium Sulfite (Na2SO3)	Sodium Thiosulfate (Na2S2O3@5H2O)
1	0.8	1.2	1.4	1.2
2	1.7	2.5	2.9	2.4
10	8.3	12.5	14.6	12.0
50	41.7	62.6	73.0	60.0

* Except for residual chlorine concentration, all amounts are in pounds.

The Contractor shall provide all necessary materials, equipment and labor for applying the de-chlorinating chemical in a manner such that proper mixing and contact time of the chemical and the heavily chlorinated water is obtained for complete removal of chlorine being flushed. The Contractor shall periodically test the flush water to verify that the chlorine residual is zero.

H. CHLORINE RESIDUAL TESTS. Upon completion of final flushing, the District will perform chlorine residual tests to ensure the chlorine residual in the main and temporary services is not higher than that generally prevailing in the remainder of the water distribution system and is acceptable to the District.

I. BACTERIOLOGICAL TESTS. Sampling and testing of water in the main and temporary services will be performed by the District after final flushing. A standard plate count will be made by the District for each sample.

J. REDISINFECTION. Should the bacteriological tests indicate the presence of coliform organisms at any sampling point, the main and temporary services shall be re-flushed, re-sampled, and re-tested. If check samples show the presence of coliform organisms, the main and temporary services shall be re-chlorinated at no additional cost to the District until results acceptable to the District are obtained.

Re-disinfection shall be completed by the continuous feed or by the slug method. Unless otherwise permitted, the chlorination agent shall be injected into the main and temporary services at the supply end through a corporation cock installed in the top of the pipe. All materials, equipment and labor necessary for the re-disinfection shall be

supplied by Contractor at no additional cost to the District.

K. HYDROSTATIC TESTING. Hydrostatic Testing will be in accordance with AWWA C600. The water main being tested shall have all air expelled by additional flushing or installation of taps on high points in the line. The pressure of the water main shall be gradually increased to obtain a minimum pressure of 100 psi over the design pressure 250 psi. at the lowest elevation point of the water main or as directed by the Engineer. The test will be for a two (2) hour duration and will not vary by more than 5 psi. All tests performed for each test section shall be witnessed and approved by a representative of the Engineer, in the event any test is performed without a representative of the Engineer, the Contractor shall be required to test the section again. Leakage is defined as the amount of water used to maintain the test pressure.

Section VI
VEHICULAR AND PEDESTRIAN TRAFFIC CONTROL

1. REFERENCE MATERIALS Traffic shall be maintained in accordance with the "Manual on Uniform Traffic Control" published by the Federal Highway Administration, current edition of Kentucky Department of Highways Standard Specifications for Road & Bridge Construction and current KYDOH Standard Drawings.

2. PEDESTRIAN TRAFFIC Should the Contractor be required to remove sidewalk or any other pavement used by pedestrians, the Contractor shall construct an approved, safe, alternate route with acceptable paving materials. Approval for alternate routes and temporary paving materials shall be acquired form the Engineer. The Contractor shall also construct temporary barricades and fences as required. No extra payment will be made for construction of temporary pedestrian walkways, fences or barricades required for water line construction, but shall be considered incidental to water line construction.

3. VEHICULAR TRAFFIC Vehicular traffic shall be maintained as required by the referenced materials listed above. The cost of all temporary paving materials for pavement restoration due to water line construction shall be considered incidental to the contract. The cost for all traffic control materials including signs, barricades, etc. shall be considered incidental to the contract. The Contractor shall be required to keep the construction area safe at all times and check that traffic control devices are in place. Should temporary paving materials used for water line construction fail to perform satisfactorily, the Contractor shall repair same at his own expense.

Section VII
TEMPORARY AND PERMANENT RESTORATION

1. TEMPORARY RESTORATION Any street, driveway, parking lot, sidewalk, stairs, walls, etc. disturbed by water line construction which is shown on roadway construction plans to be disturbed by roadway construction may be replaced with temporary materials. These temporary materials and their placement shall be approved by the Engineer prior to placement. The cost for temporary paving materials and their placement shall be considered incidental to the cost of water line construction.

2. PERMANENT RESTORATION Any street, driveway, parking lot, sidewalk, walls, shrubs, etc. disturbed by water line construction, which is shown on roadway construction plans to remain and not be disturbed by roadway construction, shall be replaced in kind. The concrete, asphalt, and stone removed shall be replaced with the same type material, the same thickness as that removed. All pavement shall be removed and replaced as detailed on drawings and in specifications contained elsewhere in the contract.

3. SEEDING AND SODDING This work shall be performed under bid items pertaining to same for roadway construction and in accordance with KDOH Standard Specifications for Road and Bridge Construction

Section VIII
METHOD OF MEASUREMENT AND BASIS OF PAYMENT

A. METHOD OF MEASUREMENT

1. Ductile Iron Water Line, each type and size, shall be measured by the linear feet laid in the trench, along the center line of the pipe, thru valves and fittings, to point of contact with existing lines, excluding any portion in concrete encasement or used in water main offsets.

2. Service Pipe, all sizes, shall be measured by the linear feet laid in the trench, excluding meter settings, from water main or existing service line to existing service line.

3. Water Line Undercut, when directed by the Engineer shall be measured along the subgrade for length and width and from pipe subgrade or bottom of fill, if in a fill placed for roadway as a pat of this same contract, to bottom of undercut. Water line undercut shall be measured and paid by the cubic feet.

4. Method of Measurement For All Other Items, shall be by each or lump sum as specified for that particular item in "SECTION I, BID ITEM EXPLANATIONS" contained herein.

B. BASIS OF PAYMENT

1. Excavation, for water lines from the surface to water line subgrade or to 6" below water line subgrade in rock, for structures, for service lines, or for any other water system item will not be a bid item but shall be considered incidental to the bid item to which it pertains. No additional payment will be made for rock excavation.

2. Water Line Undercut, when directed by the Engineer and/or NKWD, shall be paid by the cubic yard. The accepted quantities of water line undercut will be paid at the agreed unit price of $15.00 per cubic yard, which shall also include acquisition and placement of acceptable refill material. Should the Contractor be directed to perform water line undercut, the item "Water Line Undercut" at the agreed unit price of $15.00 per cubic yard shall be added to the contract by change order.

3. Water Main Fittings, shall be paid EACH, couplings in tie-ins and all fittings in offsets shall be considered incidental to those items.

4. Backfill, for all phases of water line construction shall not be paid separately but shall be considered incidental to water line construction. Flowable fill under existing and proposed pavement shall be considered incidental to road construction.

5. Temporary Restoration, of streets, roadways, sidewalks, steps, walls, trees, shrubs, etc. shall be considered incidental to water line construction when damaged by water line construction. The cost for this temporary restoration shall be considered incidental to the cost of the water line construction.

6. Traffic Control and Maintenance of Traffic, for a water line construction shall not be paid separately but shall be considered incidental to water line construction.

7. Permanent pavement restoration shall be paid as detailed elsewhere in the contract. Quantities for permanent pavement restoration for utilities have been combined with roadway items.

8. Basis of Payment for all Other Items, shall be by cubic feet, ton, linear feet, square feet, each, or lump sum as specified for that particular item.

Manhole Rehabilitation
Sanitation District No.1 of Northern Kentucky

Part 1 General

1.1 Description of Services

The Contractor shall rehabilitate existing sanitary sewer manholes as designated within the project area. The manholes shall be rehabilitated using Cured-In-Place Liner and Pipe End Seals.

This contract will be administered and performed under the direction and inspection of SD1 Project Managers. The Contractor's performance under this contract will include services to rehabilitate the entire manhole, which may include the invert, in order to eliminate infiltration and providing corrosion protection. The Contractor shall furnish all labor, components, materials, tools, and appurtenances necessary for the performance of such rehabilitation services.

1.2 Reference Documents

All work must also conform to the latest edition of the following specifications:

A. SD1 Rules and Regulations

B. American Society for Testing and Materials (ASTM). These shall pertain to product material, installation, testing, final acceptance, etc. as applicable and as referenced in the product manufacturer's literature.

1.3 Responsibilities

A. Contractor shall utilize qualified, careful, and experienced workers to execute the Work using industry best practices.

B. The Work shall be complete and all labor, materials, and services not expressly called for, but which are necessary for proper, complete and safe performance of the Work shall be provided by Contractor at no additional compensation.

C. Contractor shall safeguard workers and visitors from unsafe conditions and atmospheres on-site for the duration of the Project.

D. All Contractors' personnel on-site shall wear apparel (e.g., hat, shirt, coat, etc.) that identifies them as employees of Contractor. Failure to dress properly will result in being denied access to the site.

E. Contractor shall be required to notify the local cities or jurisdiction and obtain all permits and approvals to conduct traffic control in the work area. Contractor shall make use of all reasonable means to maintain the normal flow of traffic around the

work area during the inspection. Contractor shall erect suitable warning lights, signs and/or traffic control devices.

F. Contractor acknowledges and agrees that sewers, tunnels and other subsurface water conduit systems are inherently dangerous due to factors such as asphyxiation risks, the presence of methane gas, other combustible materials, or possible structural and infrastructure defects. Contractor recognizes the potential dangers associated with confined space activities and shall require its personnel to observe proper safety precautions and procedures. Contractor represents that it has the requisite knowledge, experience, trained personnel, and equipment to perform the Work required of Contractor under this Contract including but not limited to, entry of sewer manholes and other confined spaces, and operation of cleaning equipment.

G. Contractor is without complete knowledge as to the content and nature of the hazardous conditions related to the work, and further that it is without complete knowledge as to the nature or the degree of the hazards that might arise therefrom. Any person or persons who work on the various sites and sewer systems, examine the sites, or conduct any activity on or in the vicinity of the site do so at their own risk. SD1 assumes no liability whatsoever for any damage, loss or injury of any kind arising in any way from such entry upon, examination of, or activity on or in the vicinity of the Site by any person or persons.

   SD1 has no actual knowledge of any Hazardous Environmental Conditions with the required work to be conducted. Hazardous Environmental Conditions shall be presented to the Contractor by SD1 if prior knowledge or information is available. The Contractor shall be responsible in determining if Hazardous Environmental Conditions are present and/or discuss any concerns with SD1 for a potential solution.

H. Contractor shall submit to SD1 a written Health and Safety Plan (HASP) that documents compliance with applicable local, state, and federal worker safety regulations including, but not limited to Contractor's Written Permit-required Confined Space Entry procedures for all Work within manholes, catch basins, and sewer lines and associated traffic control procedures for all Work within roadway right-of-ways. The HASP shall include, but not be limited to, documentation of OSHA-required training for all personnel involved in the confined space entry procedures and a listing of safety equipment that will be used on the project. Contractor shall submit the HASP to SD1 at least 14 calendar days in advance of the anticipated start date of the Work.

   All operations shall be performed by the Contractor in strict accordance with OSHA and any applicable local safety requirements. Particular attention of the Contractor is directed to safety regulations for excavations and entering confined spaces.

I. Contractor's HASP must be acceptable to SD1. SD1's determination of acceptability of Contractor's HASP shall not give rise to any duty on the part of SD1 to the Contractor or to any other party and such acceptance shall not diminish the

Contractor's obligation with respect to the safety of persons and property, nor shall it extend to means, methods, techniques, procedures of construction or the Work, or to whether the representations made in the HASP comply with regulatory standards or standards of good practice.

No field work shall be done until SD1 has accepted the Contractor's HASP.

J. At the completion of the Work, Contractor shall restore the work area to its original condition.

1.4 Continuous Pumping Provisions

A. Bypassing Sewage Flow

The Contractor shall bypass sewage flow around the manhole to be rehabilitated in a manner that is appropriate to the rehabilitation method. The Contractor shall insure that flow- through plugs, pumps, and bypass lines are of adequate capacity and size to maintain flow throughout the rehabilitation process without sewer backup. Hoses and fittings shall be in good condition, without holes, so as not to cause sewage spills. If sewage backup occurs and enters buildings, or discharges to the waters of the State, the Contractor shall be solely responsible for any cleanup, repair, property damage costs and claims, or resultant regulatory agency fines. A copy of a written release shall be furnished to the Project Manager. The cost of this work shall be included in the unit price bid for the various contract items. If sewage should leak or spill during any of the Contractor's operations under this Contract, the Contractor shall immediately contact the Project Manager and implement emergency containment actions.

B. Maintaining Flow

It will be the sole responsibility of the Contractor, throughout the tenure of this contract, to provide and maintain sufficient flow at all times to pass any flash of storm flow of drainage ditches and prevent any backwater flooding due to obstruction caused by construction equipment or materials. The Contractor shall be responsible for prohibiting storm or subsurface water from entering the sanitary sewer during rehabilitation work as may be caused by flash floods, high creek waters, heavy rains, etc.

C. Retrieval of Materials and Equipment

It shall be the Contractor's responsibility to remove materials and equipment that have been lodged in a sewer directly or indirectly resulting from cleaning or rehabilitation operations. If excavation is required, the Contractor is responsible for excavation and subsequent repair. Point repairs will not be measured for payment and are considered incidental to the contract.

No extraneous material shall be allowed to directly or indirectly discharge to the sanitary sewer system as a result of the Contractor's operations. All debris resulting from surface preparation, cleaning, and coating application shall be prevented from entering the sewer's flow. All debris and excess materials must be entirely removed

from the manhole and disposed of in a fashion approved by the SD1 Inspector. The Contractor shall be held solely responsible for the cost of any cleaning or additional maintenance to the sewer system performed by SD1 or its agent in response to the Contractor's failure to meet these requirements.

1.5 Maintenance of Traffic

A. The Contractor shall be responsible for maintaining local traffic at all times and for notifying the proper authorities regarding the closing of the roads. The Contractor will be responsible for obtaining all permits required for traffic purposes.

B. The Contractor shall not begin work until standard barricades and warning signs are in acceptable position.

C. The Contractor shall maintain local traffic at all times during construction in a manner causing the least amount of inconvenience to the abutting property owners. Temporary driveways, temporary roadways, or run-arounds as may be necessary to provide vehicular access to and from the abutting properties shall be constructed, maintained, and subsequently removed by the Contractor as directed by the Project Manager.

D. The portion of the pavement not affected by the manhole rehabilitation shall be kept clear of all material and equipment.

E. If at any time traffic has to be blocked (emergencies only), the Contractor shall notify the respective fire and police departments of the jurisdiction the work is being performed in.

1.6 Existing Utilities

A. The Contractor must take the necessary precautions for the protection of any utility encountered on the project or the restoration of any utility damaged during the work.

B. The Contractor shall notify, at least 48 hours before breaking ground, all public or private service corporations having wire, poles, pipes, conduit, manholes, or other structures that may be affected by this operation, including all structures, which are affected and not shown on these plans.

C. Supporting and protecting existing water lines, gas mains, telephone conduit, etc., shall be included in payment for the various contract items of work.

D. All work required for the maintenance of service of existing utilities shall be done by, and at the expense of the Contractor.

E. All maintenance, repair, and replacement of existing utilities shall be in accordance with the rules and regulations of the various utility companies having jurisdiction.

F. All existing storm sewers, driveway drains, and other surface drain pipes, removed or damaged during construction shall be repaired and reconnected by the Contractor as directed by the Project Manager at no additional cost.

G. It is assumed there are water, gas lines, etc. serving each residence. The Contractor shall repair or replace these utilities if damaged at no additional cost.

H. It shall be the Contractor's responsibility to work equipment around poles, trees, or other obstructions and to do so at his own expense.

1.7 Cleanup

A. The Contractor shall keep the work area in an uncluttered condition by the frequent removal of debris. The Contractor shall remove all debris and unused material and leave the area in a condition similar to the condition of the area before any work was performed.

1.8 Property Damage

A. The Contractor is responsible for any damage to private or public property and must promptly notify the assigned Project Manager at the time of the event.

1.9 Access to Municipal Water Supplies

A. The Contractor shall be required to obtain all the necessary permits and pay all fees required to use the various municipal water works supply systems. All costs for water usage will be included in the various contract items. Water services to residents or other users of the municipal water works system will not be shut off.

B. Failure to comply with the rules for usage of the water works systems will result in denial of any use of the water works system facility.

Part 2 Cleaning and Surface Preparation

2.1 Cleaning and Surface Preparation

A. For all lining rehabilitation systems, concrete surfaces shall be pressured cleaned with a minimum of 3500 psi at 2.5 gallons per minute. Manhole wall preparation shall include the plugging and/or patching of all visible leaks, cracks, holes, voids, and deteriorated surfaces in the manholes. Concrete surface defects, such as deteriorated concrete or masonry, hollow areas, bug holes, honeycombs, cracks and voids shall be filled flush and true with manufacturer recommended grouting, plugging or patching compound.

B. For all manhole rehabilitation systems, the manhole surfaces, including the bench shall be free of leaks for a minimum of 12 hours prior to proceeding with the

application of the manhole rehabilitation product(s). The Contractor shall stop all leaks with patching materials or infiltration control materials that are compatible with the manhole rehabilitation product(s) in accordance with the manufacturer's instructions. The mitigation of severe infiltration may require the injection of chemical grout under pressure. If the Contractor chooses to mitigate all active infiltration by injecting an approved chemical grout the 12-hour waiting period to begin the application of the rehabilitation product(s) may be waived at the final discretion of the SD1 representative.

C. The Contractor shall remove all existing manhole steps within the surface area to be rehabilitated unless otherwise approved by the Project Manager. The metal portion of all steps shall be removed flush with the manhole wall. A visual inspection by the SD1 Inspector shall yield no indication of the steps' previous location in the rehabilitated wall.

D. The bench area shall be repaired as further indicated or as directed by the Project Manager. The prepared surface shall be smooth and provide smooth flow through the manhole. The entire surface of the manhole's benches shall be uniformly sloped in such a manner as to direct all water to the manhole's channel.

E. Inverts shall be rehabilitated at the discretion of the SD1 Inspector. Inverts shall be rehabilitated with the product listed in Part I and as detailed herein.

Part 3 Product Application: Cured-in-Place

3.1 The Cured-In-Place Liner is custom fabricated to fit the configuration of each manhole structure. The liner system shall allow rehabilitation of concentric, eccentric or flat top manholes without removing manhole ring, top section, or corbel.

3.2 The installation of the approved liner system shall be in strict accordance with the manufacturer's written instructions. The liner shall be a minimum thickness of 100 mils and must contain at least 2 layers of 18oz woven roving fiberglass. Installation shall include re-grouting all inlet and outlet lines and benches as needed. Installation shall additionally include all preparation, installation, and curing and finish operation for the complete rehabilitation process.

The approved liner system shall be PTLS as manufactured by Poly-Triplex with Cured-In-Place Pipe End Seals (as required). CPP Invert shall be manufactured by Epoxytec (as required).

3.3 The lining of the structure shall result in a monolithic structure, bonded to the contours of the existing structure. The liner shall be continuously bonded to the interior structure surface, and shall be completely watertight. The Contractor shall be solely responsible for the installation of any chamfers or fillets using compatible patching materials prior to liner installation necessary to ensure continuous bonding of the liner.

3.4 All cured-in-place full depth lining systems shall be installed with a minimum bladder pressure of three (3) psi (pounds per square inch) for installation depths of less than ten feet (10'), and five (5) psi (pounds per square inch) for installation depths greater than or equal to ten feet (10') unless otherwise approved by the Inspector.

3.5 The installation shall form a structurally enhanced monolithic liner from the junction of the bench and invert channel, to the lip of the casting.

3.6 Complete lining of the invert may be required under this contract and is under the discretion of the Inspector.

3.7 All epoxy resin and coatings shall adhere to moist surfaces and cure even when submerged in water. Adhesion of the epoxy resin and coatings shall exceed the tensile strength of the concrete, or brick, substrate.

SECTION 4 Product Application: Invert Rehabilitation

4.1 Inverts shall be repaired at the discretion of SD1.

4.2 Invert rehabilitation shall be performed prior to manhole rehabilitation.

4.3 All flow through the invert shall be diverted or bypassed. Pressure clean with a minimum of 3500psi at 2.5 gallons per minute. Scouring or other methods maybe needed to insure a bondable surface.

4.4 Shall be a two-component moisture insensitive, highly adhesive, chemical resistant, 100% solid strength epoxy paste with superior adhesion.

4.5 Apply a minimum of 1/8" of epoxy to the entire invert. Invert and manhole rehabilitation products must overlap a minimum of 3 inches and bond to one another.

4.6 Rehabilitated invert must provide a smooth leak free channel for waste flow.

4.7 This item shall be paid for at the unit price bid per each.

PART 5 Manhole Rehabilitation Quality Assurance and Testing

5.1 Visual Inspection Performed by SD1

A. SD1 will have an Inspector enter selected manholes periodically to ensure that the rehabilitation products meet the final acceptance criteria outlined in other sections of this specification. The Inspector may also impact the coating areas with a hammer and possibly perform destructive and nondestructive testing in order to ensure adequate bonding and thickness of the coating (or lining). The Contractor shall make all repairs to areas of the manhole that are found to be defective. All costs for any repairs shall be at the Contractor's expense.

5.2 Statement of Warranty

A. An unconditional, non-prorated warranty covering all labor and materials, to stop infiltration, material failures, deterioration, defects, etc. will be required by the installer and the manufacturer for a 5 year warranty. All other additional warranties as provided by the manufacturers will be applicable.

PART 6 Payment for Work

6.1 Payment for manhole rehabilitation shall be based on the unit prices as shown on the Bid Pricing Form. Payment for cleaning, plugging, patching, sealing, step removal, and all other work required for manhole rehabilitation shall be included in the manhole rehabilitation unit price items

A. Cured-in-Place Lining
   1. Liner as described in Part 3 per vertical foot to the nearest 0.1 ft.
   2. Epoxy Invert Rehabilitation as described in Part 4 per each.

6.2 Payment for invert repair shall be paid on a per each basis, complete in place and approved by SD1.

6.3 Each lump sum and/or unit bid price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

6.4 Contractor will not be entitled to any adjustment in a unit bid price as a result of any change in an estimated quantity and agrees to accept the aforesaid unit bid prices as complete and total compensation for any additions caused by changes or alterations in the Work as ordered by the Engineer.

6.5 The following items of work will not be measured for payment but the cost thereof will be considered as incidental to the contract:

A. Records, logs, photos, etc.
B. Inspection
C. Removal and disposal of debris.
D. Traffic control (Signs & Cones).
E. Bypass pumping and flow control as required. (15" diameter and less/ 2MGD or less)
F. Providing temporary and final paving at any excavations.
G. Emergency after hour's response caused by the rehabilitation work.
H. Demobilization and mobilization because of suspension of work.

END OF SECTION

Gravity Sewer Pipe Rehabilitation by Cured-In-Place Pipe Method

Sanitation District No.1 of Northern Kentucky

Part 1 General

1.1 Description of Work

Furnish all labor, material and equipment to provide for the reconstruction of existing sewer pipes using an approved Cured-In-Place Pipe (CIPP) method by forming a new pipe within an existing pipe, which has generally maintained its original shape. This Specification covers the general requirements for the referenced specifications, CIPP manufacturer and installer qualifications, submittal and guaranty guidelines, materials, installation and testing procedures.

1.2 General

Supply all products and perform all work in accordance with applicable American Society for Testing and Material (ASTM), American Water Works Association (AWWA), American National Standards Institute (ANSI), or other recognized standards. Latest revisions of all standards are applicable. Where discrepancies exist between this specification and referenced product/process standards, this specification shall govern.

1.3 Intent

It is the intent of this specification to provide for the reconstruction of existing sewers by the CIPP method in pipes which have generally maintained their original shape. The CIPP shall provide flow capacity not less than 100% of the original pipe's flow capacity when new. The process is defined as the reconstruction of sewer lines by the installation of a thermosetting resin-impregnated flexible felt-fiber tube coated on one side with an impermeable plastic which is installed into the existing sewer utilizing a hydrostatic head, or air pressure. Curing is accomplished by circulating hot water or the introduction of controlled steam throughout the length of the inverted tube to cure the resin into a hard, impermeable pipe with the plastic coating on the interior surface of the newly formed pipe. The CIPP shall extend the full length of the original pipe segment and shall provide a structurally sound, joint-less, close fitting and corrosion resistant cured-in-place pipe.

1.4 Objective

The primary objective of this section is to rehabilitate those sewers on which failure could be very disruptive and hazardous to public health and, to restore structural integrity to sewers which would be very expensive to repair after failure. The secondary objective of this scope is to reduce the excessive infiltration and inflow of extraneous water into selected sewer segments thereby reducing sewer overflows and the unnecessary treatment and transport costs associated with inflow/infiltration. It is critical that both the Product and the Installer have the ability to meet or exceed all requirements of the Owner.

Part 2 Qualifications

2.1 Minimum Qualifications-CIPP Products & Installing Contractors

In order to establish minimum product quality and Installer capability, the following minimum requirements shall be met. The purpose for these submittals is to allow the Owner/Engineer the opportunity to conduct a complete, thorough and objective evaluation of proposed CIPP products and the Installing Contractor to determine if the submitted products and Installer meet all experience, quality and utility standards required by the specification.

2.2 CIPP System Manufacturer

The cured-in-place (CIPP) system or process must have a minimum proven performance record of 1,000,000 linear feet installed of the exact name-brand product bid in the United States, with a minimum of 20,000 linear feet in diameters 24-inch or larger. In addition, a minimum of 10,000 linear feet of 48-inch diameter or larger, of the exact name brand product must have been installed in the United States. **Documentation shall be submitted with the bid. Failure to submit proper certification may result in the disqualification of the Bidder**.

2.3 Contractor/Installer Experience

The Installing Contractor for the cured-in-place reconstruction of sewers must have a minimum of 5 years' experience using the exact named product proposed and, have installed at least 500,000 linear feet of the exact named proposed product including at least 20,000 feet of 24-inch diameter (or larger) cured-in-place product. The installing Contractor must certify that the liner tube/resin composite system to be used is the exact system for which all submittals and certifications were made in the bid. No substitutions will be allowed, and misrepresentations or omissions may be grounds for contract termination with the Contractor waiving any and all claims against the Owner for work performed or costs incurred. In addition, the Installing Contractor must operate and have maintained his own resin impregnation (Wet-Out) facility, staffed with his own employees for a minimum of five (5) years prior to the Bid date of this contract. No out-sourcing of the wet-out phase of CIPP installed under this contract will be allowed. The use of contract employees for the purposes of resin wet-out or installation of CIPP shall not be acceptable under this contract. **Documentation shall be submitted with the bid. Failure to submit proper certification may result in the disqualification of the Bidder**.

2.4 Qualifying Superintendent

The "Qualifying Superintendent" must have a minimum of five years' experience with cured-in-place pipe products. In addition, the "Qualifying Superintendent" must have supervised jobs in which at least 20,000 feet of pipe has been reconstructed using the exact named product proposed including a minimum of 5,000 feet of 24-inch diameter (or larger) cured-in-place product. The superintendent for the job shall be on-site during all phases of the work involving any pre and post-installation video inspection, sewer cleaning or insertion and processing of the CIPP as well as any associated excavation services. Bidders are encouraged to qualify more than one person under the requirements of this section as the "Qualifying Superintendent" may not be removed or replaced without the expressed written approval of Sanitation District No. 1 for the duration of this contract. The "Qualifying Superintendent" shall submit the minimum information under this section:

- Project name & location and completion date
- Lengths and diameters of CIPP installed
- Project Owner, contact name and phone number

Documentation shall be submitted with the bid. Failure to submit proper certification may result in the disqualification of the Bidder

2.5 CIPP Process/System Declaration

The following information shall be submitted with the Bid:

The Bidder shall furnish documentation that the proposed CIPP lining system and Installer is licensed, certified and properly trained in the installation of the proposed system by the system manufacturer. **Documentation shall be submitted in the Bid. Failure to provide this documentation may be grounds for disqualification.**

Part 3 General Requirements of CIPP

The finished pipe must be such that when the thermosetting resin cures, the total wall thickness will be a homogeneous, monolithic felt and resin composite matrix that will be chemically resistant to withstand internal exposure to domestic sewage. When cured, the CIPP must form a mechanical bond with the host pipe.

3.1 Reference Specifications

Installation and material tests of cured-in-place pipe (CIPP) must meet the minimum requirements demonstrated in the latest revisions of the following ASTM standards:

Test Method of Flexural Properties of Plastics

ASTM F-1216 Standard Practice for the installation of Cured-In-Place Pipe by Inversion Lining

ASTM D-790

Standard Polyester Resin
Flexural Strength 4,500 psi
Flexural Modulus 250,000 psi

Enhanced Polyester Resin
Flexural Strength 4,500 psi
Flexural Modulus 400,000 psi

Any approved process shall strictly adhere to this specification with regard to all standards and requirements. Where discrepancies exist, or any latitude is either inferred or interpreted between this specification and ASTM product and process standards, THIS SPECIFICATION SHALL GOVERN.

3.2 Submittals

1. The Contractor shall furnish three (3) copies of the design calculations establishing the structural capabilities, chemical composition, thickness, curing temperature and period, assumptions, and other mechanical properties of the liner system proposed.

2. The Contractor shall furnish three (3) copies of the manufacturer's brochures giving a complete description of the product proposed, its physical and chemical composition, the same for the thermosetting resin or epoxy hardener, the recommended range of curing temperature, period of cure, cool-down procedures and method of installation.

3. Sampling procedures for obtaining representative restrained or plate (for diameters 15-inch and larger), samples of the finished liner.

Part 4 Materials

4.1 Cured-In-Place-Pipe

1. The CIPP material shall be fabricated from materials which, when cured, will be suitable for the environment intended, i.e., resistant to withstand exposure to sewage gases containing normal levels for domestic sewage of hydrogen sulfide, carbon monoxide, carbon dioxide, methane, traces of mercaptan, kerosene, saturation with moisture, dilute sulfuric acid, external exposure to soil bacteria, and any chemical attack which may be due to materials in the surrounding ground. The final product must not deteriorate, corrode, or lose structural strength in any manner that will preclude meeting the expected design life.

2. The structural performance of the inverted cured-in-place pipe must be adequate to accommodate all internal and external loads (live and dead) over its service life. The CIPP liner shall be designed considering the host pipe is fully deteriorated, a prism loading, a soil loading of 120 pcf, a 2.0 factor of safety, a 2-percent ovality, a 5-percent maximum deflection, a 1,000 psi modulus of soil reaction, a 4,500 psi flexural strength, a 3,000 psi tensile strength, a lining enhancement factor (K) of 7 maximum, H-20 live loads where applicable, 50-percent long-term modulus reduction factor and a hydrostatic load beginning at the surface.

4.2 Acceptable Resin Classes

1. The resin class for CIPP installed under this contract shall be either a Standard Polyester or Enhanced Polyester unless otherwise directed by the Sanitation District due to site-specific field conditions and/or design requirements.

4.3 Standard Polyester Resins

1. The resin used shall be high-grade corrosion resistant isophthalic polyester specifically designed for the CIPP being installed. Only premium, non-recycled resin shall be used. The acceptable resin, (Reichhold Polylite® 33420 or approved equal) shall have been tested according to ASTM D2990, D5813, and F1216 by accredited, third-party testing facilities. Results of these tests shall be made available to the Sanitation District upon request. **Proper certification shall be**

submitted with the Contractor's bid. Failure to provide this documentation may be grounds for disqualification.

2. The resin must be manufactured under ISO 9002 certified procedures. The resin vendor must be able to reference the corrosion scale with the resin itself having a heat deflection temperature greater than 212 degrees Fahrenheit. Only PREMIUM, NON-RECYCLED resins will be accepted. PET resins or those containing enhancement additives and/or fillers will not be accepted.

4.4 Enhanced Polyester Resins

1. The resin used shall be a corrosion resistant enhanced thixotropic, medium reactivity, high viscosity, and rigid, chemical resistant isophthalic resin. These resins contain a mineral filler to enhance mechanical properties and are specifically formulated for use in the cured-in-place pipe (CIPP) industry. **Proper certification shall be submitted with the Contractor's bid. Failure to provide this documentation may be grounds for disqualification.**

2. The acceptable resin, (Reichhold Polylite® 33420-E or approved equal) shall have been tested according to ASTM D2990, D 5813 and F1216 by accredited third party testing facilities. Results of these tests shall be made available to the Sanitation District upon request.

3. The resin must be manufactured under ISO 9002 certified procedures. The resin vendor must be able to reference the corrosion scale with the resin itself having a heat deflection temperature greater than 224 degrees Fahrenheit. Only PREMIUM, NON-RECYCLED resins will be accepted.

4. The resin shall be shipped directly from the resin manufacturer's facility to the CIPP wet-out facility. The resin shall not be sent to any intermediate mixing facility. Copies of the shipping documents from the resin manufacturer shall be submitted to the Sanitation District indicating dates of shipment, originating and receiving locations

4.5 Quality Assurance

1. In order that the Owner is assured that the specified resin class is used for the duration of the Contract, the following provisions are made part of this specification:

2. The Contractor shall designate a wet-out facility and shall provide wetout liner tubes from this designated facility only. Multiple facilities to supply wet-out liner tubes for the duration of this contract may not be used without prior approval of the Engineer.

3. The Contractor shall place a sampling valve in-line at a point in the resin/catalyst mixing stage so that a sample of non-catalyzed resin may be taken. A second sampling valve shall be placed in-line at a point after the resin/catalyst mixing stage, but prior to catalyzed resin injection into the liner so that a resin sample may be taken. Both sampling valves shall be left in place for the duration of the Contract.

4. The Owner/Engineer shall have the right to inspect the designated wetout facility and draw samples form one or both sampling valves without prior notice to the Contractor for the duration of the Contract.

5. To further assure usage of a specified resin class, the Owner reserves the right to subject resin samples to an infrared analysis (IR Scan). This standard analytical test involves shining a beam of light in the infrared frequency region through a thin sample of subject resin. The frequency of light is then varied across the infrared spectrum. Chemical functional groups present in the resin being analyzed will absorb infrared light as specific frequencies and with characteristic absorption intensities. A spectrum created from the measurement of light transmitted through the sample across the range of infrared frequencies shall be used to determine the resin's chemical fingerprint. An overlaid IR spectrum of the "Acceptable Resin" by class (see sections 4.2, 4.3 and 4.4 of this specification), shall be used as a baseline comparison for the purpose of a resin class test.

6. The Owner/Engineer may perform random Infrared Scans (IR Scans) and/or Composite Burn-offs to insure resin quality and consistency throughout the duration of the Contract and shall be responsible for the cost of IR testing.

4.6 Catalyst Systems

1. The exact mixture ratio of resin and catalyst shall also be submitted. The catalyst system shall be identified by product name. The resin/catalyst ratio shall be approved by the resin manufacturer in writing. The catalyst system shall be made up of a primary catalyst and a secondary catalyst. The primary catalyst shall be Akzo Perkadox 16 or approved equal and shall be added at a maximum of 1% of the resin volume by weight unless otherwise approved by the Engineer. The secondary catalyst shall be Akzo Trigonox or approved equal and shall be added at a maximum of 0.05% of the resin volume by weight unless otherwise approved by the Engineer

2. "Quick-Cure" or accelerated resin systems including those formulated by substantially increasing the amount of catalysts from that specified above, will not be allowed. Resins, catalysts and resin/catalyst mix ratios shall not be changed or altered during this Contract unless specifically approved by the Engineer in writing.

3. Cure schedules for the CIPP shall be submitted to the Engineer for review. The proposed curing schedules/process shall be approved by the resin manufacturer in writing. Cure schedules shall include specific information on "step curing" procedures, "cooking times", duration and "cool down" procedures – all to be approved by the resin manufacturer in writing.

4. The resin shall be shipped directly from the resin manufacturer's facility to the CIPP wet-out facility. The resin shall not be sent to any intermediate mixing facility. Copies of the shipping documents from the resin manufacturer shall be submitted to the Engineer indicating dates of shipment, originating and receiving locations.

5. The Contractor shall submit a Certificate of Authenticity from the resin manufacturer for each shipment to the wet-out facility to include the date of manufacture and Heat Distortion Temperature. This information shall be submitted before the manufacture or installation of any CIPP.

4.7 Liner Tube

1. The tube shall consist of one or more layers of absorbent non-woven felt fabric and meet the requirements of ASTM F1216. In the event of a discrepancy between the referenced ASTM requirement and this specification, this specification will govern.

2. The tube shall be constructed to withstand installation pressures, have sufficient strength to bridge missing pipe, and stretch to fit irregular shaped pipe sections.

3. The wet-out tube shall have a uniform thickness that when compressed at installation pressures shall meet or exceed design "finished and installed" thickness.

4. The tube shall be manufactured to a size that when installed shall tightly fit the internal circumference and length of the original pipe. In the event that under-sized pipe is present, liner tube shall be manufactured so that overlap folds or wrinkles do not occur. Allowances shall be made for circumferential stretching during inversion.

5. The outside layer of the tube, before installation, shall have an impermeable polyurethane or polyethylene plastic coating. This coating shall be an impermeable, flexible membrane that shall contain the resin and facilitate monitoring of resin saturation during resin impregnation. This coating shall form the inner layer of the finished pipe and is required for enhancement of corrosion resistance, flow and abrasion properties.

6. The tube shall be homogeneous across the entire wall thickness containing no intermediate or encapsulated layers. No material may be included in the tube that may cause de-lamination in the cured liner, and no dry or unsaturated areas or layer shall be evident.

7. The wall color of the interior liner surface after installation shall be a light-reflective color so that a clear, detailed inspection with closed circuit television equipment may be conducted.

8. The outside of the tube shall be marked for distance at regular intervals not to exceed 10 feet. Such markings shall include the Manufacturers name or identifying symbol.

9. The minimum length shall be that deemed necessary by the Contractor to effectively span the distance between manhole sections of the segment to be lined unless otherwise specified. The line lengths shall be verified in the field before impregnation of the tube with resin.

Part 5 CIPP Design

5.1 Liner Thickness

The Contractor shall submit liner thickness calculations to the Engineer for review. The CIPP shall be designed in accordance with the applicable provisions of F1216 and D2412 for "fully deteriorated gravity pipe conditions" and shall meet the following design conditions:

1. AASHTO H-20 Live Load with two trucks passing for CIPP in streets (16,000 lbs.)

2. A soil modulus of elasticity of 1000 psi, soil weight of 120 pounds per cubic foot and a coefficient of friction of K_u'=0.130r.
3. **Standard Polyester** - Short-term flexural modulus of 250,000 psi and long-term modulus of 125,000 psi
4. **Enhanced Polyester** - Short-term flexural modulus of 400,000 psi and long-term modulus of 150,000 psi
5. Safety factor of 2.0 shall be used.
6. Groundwater elevation at the ground surface.
7. Pipe ovality: 2%
8. Poisson ratio of 0.3.
9. Enhancement factor (K) of 7.
10. Service temperature range shall be 40 to 140 degrees

5.2 Minimum Acceptable Pipe Thickness ("Finished and Installed")

1. The Minimum Acceptable Pipe Thickness (Finished and Installed), shall be based on design parameters in section 5.1 Items 1 through 9 of this Specification adjusted for site-specific field conditions and approved by the Engineer in writing prior to tube manufacture.

2. It is the Contractor's responsibility to determine the site specific external loads on the liner and increase or decrease its thickness as required. The Contractor shall submit his proposed plan for ensuring that the finished and installed CIPP meets minimum thickness requirements. The plan shall include detailed inversion procedures to reduce stretching and resin loss and to minimize shrinkage.

3. The contractor shall submit his price proposal based on the appropriate length, size, and existing pipe parameters. The deterioration of sewers is an on-going process. In the event pre-construction inspections reveal the sewers to be in substantially different conditions than those in the design considerations, the contractor shall request such changes in reconstruction liner thickness, supporting such requests with the appropriate design data satisfactory to the Engineer. The deviation, if approved, shall be reflected by the appropriate addition or reduction in the unit cost for that size as agreed to by the Owner/Engineer.

4. Any liner that does not meet the specified strength and/or thickness requirements, regardless of the amount below the specified requirements, shall be corrected by the Contractor in a manner approved by the Engineer at no additional cost to the Owner. The Engineer's decision on how to correct deficient CIPP installations shall be final. Options for correcting deficient liners that will be considered by the Engineer include removing the liner and re-lining the sewer, excavating and replacing the sewer from manhole to manhole, or providing the Owner with a substantial credit. The primary option that will be considered will be to re-line the sewer. Credits will only be authorized for CIPP that does not meet required thickness. If a credit is acceptable to the Owner and Engineer, the credit shall be calculated by multiplying the bid price by the percent that the liner thickness is below the required installed thickness as follows:

   Credit = (1 – Installed CIPP thickness/required CIPP thickness)
   X bid price

   The Contractor shall not assume a credit will be acceptable to the Engineer/Owner in any case.

5. The finished CIPP will provide a uniform smooth, interior wall surface and will have at least 100% of the flow capacity of the original pipe before rehabilitation. In lieu of measurements, calculated capacities may be derived using a Manning “n” coefficient of 0.013 for the original pipe material and a Manning “n” coefficient of 0.011 for a joint-less smooth-wall cured-in-place pipe.

Part 6 Execution

6.1 By-Pass Pumping

1. If the sewers to be rehabilitated under this contract convey both sanitary and storm water flows, it shall be incumbent upon the Contractor to complete the installation of CIPP during a time-frame wherein precipitation shall not impact the work process or prevent normal storm water flow into and along the subject sewers. The Contractor shall in any case provide for the bypass pumping of all flows the host pipe is deemed by the Owner to be capable of carrying.

2. The installation methodology contemplated requires the temporary blocking and back-ups of sewers and sewage. Contractor shall be responsible to limit the extent and duration of such blockages and backups so that overflows and spillage onto public or private property and into storm sewers, waterways, and streets does not occur. In the event that such spillage or overflows do occur during the course of or as a result of the Work, the Contractor performing the Work shall immediately eliminate the spillage or overflow and, as necessary, remove the blockage and eliminate the back-up. On elimination of the spillage or overflow, the Contractor is to clean up and disinfect the area. Work to stop or contain such events is to be deemed EMERGENCY in nature and sufficient justification for total mobilization of resources, the use of overtime or double time, and any other reasonable measures to assure correction of the problem without delay. Damages arising from blockages, back-ups, spillage, or overflows of sewage during the course of the Work or because of the Work shall be the sole responsibility of the Contractor.

3. Sewage flow shall be pumped around segments during CIPP installation, lateral service reinstatement and post-installation closed-circuit television inspection.

4. Pumping equipment shall have the capacity to convey 100% of predicted dry and wet-weather flows for a 2 year design storm. Maps with predicated flows are provided to size bypass pumping systems around the construction area.

   The flow shall be intercepted at the upstream end of the construction area and shall be pumped through temporary piping of adequate size. The flow shall be discharged into a manhole on the downstream side of the construction area, thus bypassing the sewer segment(s) under construction. The Contractor shall be required to contact all residential and commercial customers whose service lines connect to the sewer main being bypassed and inform them that they will be temporarily out of service. The Contractor shall also advise those customers against water usage until the mainline is back in service. After completing the necessary work on the main line to allow its reuse, the Contractor shall advise those customers that the sewer main is back in service. Should a condition arise that the Contractor cannot restore service within twelve

(12) hours of service interruption; the Contractor shall make provisions for pumping all flows within the service interruption area at no cost to the Owner.

5. A standby pump or pumps of the same capacity shall be required on site.

6. The Contractor is responsible for paying all fines imposed for overflow or spills during construction.

6.2 Cured-In-Place-Pipe Rehabilitation

1. All reconstruction of existing gravity sewer mains using an approved CIPP Product and Installer shall be performed in strict accordance with this Specification and the latest revision of ASTM F1216. Where discrepancies exist, or any latitude is either inferred or interpreted between this specification and ASTM product and process standards, this Specification shall govern.

2. Pull-In and Inflate methods of CIPP installations, (reference ASTM F1743), will not in any case be acceptable.

3. The Contractor shall carry out his operations in strict accordance with all applicable OSHA standards. Particular attention is drawn to those safety requirements involving work on an elevated platform and entry into a confined space.

4. The Contractor will be responsible for locating and accessing all manholes and provide access to water hydrants for cleaning, inversion and other work items requiring water.

5. All surfaces, which have been damaged by the Contractor's operations, shall be restored to a condition at least equal to that in which they were found immediately prior to the beginning of the Contractor’s operations. Suitable materials and methods shall be used for such restoration. The restoration of existing property or structures shall be done as promptly as practicable and shall not be left until the end of the construction period. Compensation for this work will be included in the Contractor’s proposal.

6. The tube shall be fabricated to a size that, when installed, will neatly fit the internal circumference of the conduit(s) designated for CIPP. Allowance shall be made for the circumferential stretching during insertion of the tube. After curing of the resin is completed, the hardened CIPP will extend from manhole to manhole of the section designated providing a structurally sound, corrosion-resistant, watertight conduit that excludes exfiltration and infiltration, is tightfitting within the existing pipe, and is free of voids or annular spaces between the CIPP and the existing pipe walls. K-Factor for tightness shall equal 7.0 or greater. All terminations into manhole walls shall be watertight at the time of final inspection. No annular space shall be visible between the CIPP and manhole wall. In the event that an annular space is present, it shall be completely filled with epoxy or other suitable material to the satisfaction of the Engineer.

7. The Contractor shall be responsible for determining the minimum length to effectively span the distance from the manhole to manhole and shall verify the length of the fabric tube in the field before the tube is either cut to length or wet-out with resin. The tube may run through one or more manholes with the approval of the Owner/Engineer.

6.3 Preliminary Installation Requirements

1. "Normal" Cleaning of Sewers

    a. Sewers shall be cleaned of all debris, roots and other materials that would inhibit proper inversion of CIPP

    b. Utilizing high-pressure jet cleaning equipment, several passes are completed to assure that all debris is removed from the pipe to the satisfaction of the Owner/Engineer.

2. "Heavy" Cleaning of Sewers

    If roots are present which require the use of mechanical brushes or dragging devices or, if in the judgment of the Owner/Engineer, the pipe is more than 25% full of debris, the pipe shall be cleaned to the satisfaction of the Owner/Engineer and additional payment authorized under the appropriate Pay Item on the Bid Form. Heavy Cleaning shall be defined as the pipe being more than 25% full of debris or requiring the use of apparatus other than normal high-pressure jetting equipment. The Contractor shall be paid for heavy cleaning on the basis of the distance loosened debris is moved to the nearest point of extrication from the sewer. Payment shall be calculated on a lineal foot basis and will be paid in addition to the normal cleaning rate shown on the Bid Sheet. **Any heavy cleaning must have pre-approval from the Owner/Engineer**.

6.4 Debris Disposal

All debris cleaned from the pipe shall be removed and disposed of at the cost of the Contractor in a dumpsite designated by the Owner. Debris shall not be allowed to wash into any other pipe segment either up or downstream from the pipe segment being cleaned.

6.5 Provision and Usage of Water

The Owner shall provide all water required to perform this Work. The Owner shall provide a fire hydrant meter at no cost to the Contractor beyond the normal security deposit for use on the Project. Contractor shall coordinate connection and usage limits and withdrawal locations with the Owner prior to construction.

6.6 Pre/Post Installation Video Inspection

1. Prior to installation of the CIPP, but not more than 48-hours prior to such installation, the section of sewer designated for CIPP is to be televised its full length using a remote television camera specifically designed for that purpose.

2. Inspection of the sewer pipe shall be performed by the Contractor's experienced personnel trained in location breaks and obstacles by CCTV inspection. Utilizing a color video inspection system with data recording capabilities, the entire pipe section to be lined shall be recorded in a

Digital Format and two (2) copies produced. The interior of the pipe shall be carefully inspected to determine the location of any conditions, which may prevent the proper installation of the CIPP, and it shall be noted so that these conditions can be corrected. A DVD/CD-ROM and suitable log shall be submitted to the Owner.

3. Pre and post-installation videos and logs shall be submitted during the course of the Work. The television camera used for this purpose shall be operative in one hundred percent moisture conditions. Lighting for the camera shall be sufficient to yield a clear picture of the entire periphery of the pipe. The camera, television monitor, and other components of the video system shall be capable of producing a five hundred line resolution picture. The camera's rate of travel shall not exceed 20 feet per minute. At each service, the camera shall come to a complete stop and the service shall be panned so that the entire cross sectional area of the service is inspected. The footage meter count shall be clearly visible. Logs shall include date, line size, length, manhole numbers and project number, direction of camera travel, direction of flow, and any observed defects or comments. For each service the log should include the distance from manhole, its location (e.g. 9:00 or 2:00 o'clock), street address or parcel, and distance from mainline to cleanout. Videos between manhole segments shall be continuous; no breaks or "blink-outs" in the video shall be observed. The videos shall be in CD-ROM or DVD format.

4. Sewer service connections shall also be TV inspected from within the sewer main, identifying all service connection locations and conditions. Conditions of service connections shall be noted in the log.

5. The full cross-sectional area of the pipe shall be visible during video inspection except where misalignment of the sewer may have resulted in standing water in bellies or sags.

6. If for any reason the camera becomes disabled inside the sewer and cannot further proceed, the Contractor will be responsible for retrieving the camera at no additional cost to the Owner.

6.7 Identification and Pre-measurement of Lateral Connections

A 360-degree Pan-and-Tilt view camera shall be used to inspect the pipe. At each connection the operator will stop and turn the camera lens toward the lateral thereby inspecting the first 8 to 12 inches of the lateral connection. The Contractor shall be responsible for determining if connection is active or inactive. For each existing service connection determined by the Contractor to be active, the Contractor shall determine the condition of the service connection to the main, make his recommendation for lateral connection repair, and record both items in his log.

6.8 Resin Impregnation of the CIPP Tube (Wet-Out)

The contractor shall designate a location where the tube shall be impregnated or "wet out" with resin, using distribution rollers and a vacuum impregnation system to thoroughly saturate the tube's felt fiber prior to installation in the field. The impregnated tube shall be free of pinholes, resin voids and other defects. If the cured-in-place pipe is impregnated at the manufacturing plant, it shall be delivered to the job site in a refrigerated truck, and remain refrigerated prior to installation to prevent premature curing. The flexible tube shall be vacuum impregnated with resin under controlled conditions or by such other means provided such means can assure thorough resin impregnation to the full satisfaction of the Owner/Engineer. The volume of resin used shall be sufficient to fill all voids in the tube material at

normal or design thickness and diameter. The volume of resin shall be adjusted by adding seven to ten percent excess resin for the change in resin volume due to polymerization and allow for any migration of resin into the cracks and joints in the original pipe.

6.9 Inversion of CIPP

1. The impregnated tube shall be inverted through an existing manhole or other approved access point utilizing a hydrostatic water column or pressurized air until it has fully traversed the designated line length and the inversion face breaches the destination manhole or termination point. The fluid column or air pressure shall have been adjusted and maintained to be sufficient to cause the impregnated tube to hold tight against the existing pipe wall, produce dimples at side connections, and flared ends at the manholes. Lubricant during inversion shall be used as necessary in accordance with the CIPP manufacturer's recommendations. Thermocouples shall be placed at the top and bottom interface of both ends of the liner for monitoring temperature during the cure cycle. Care should be taken during tube installation not to over-stress the fabric fiber.

2. ***When using pressurized air***, particular attention should be given to the maintenance of the minimum required "finished and installed" thickness of the CIPP. Before the inversion begins, the tube manufacturer shall provide the minimum air pressure required to hold the tube tight against the host pipe and the maximum allowable pressure so as not to damage the tube. Once the inversion has started, pressure shall be maintained between the minimum and maximum pressures until the inversion has been accomplished

6.10 Curing - Using Circulated Heated Water

1. A suitable source of heat and water recirculation equipment is required to circulate heated water throughout the pipe. The equipment shall be capable of delivering hot water throughout the inverted tube to uniformly raise the temperature required to affect a cure of the resin.

2. ***Initial cure*** will occur during temperature heat-up and is completed when exposed portions of the new pipe appear to be hard and sound and the thermocouples indicate that the temperature is of a magnitude to realize an exotherm or cure in the resin. After initial cure is reached, the temperature should be raised to the post-cure temperature recommended by the resin manufacturer. Post-Cure temperature should be held for a period as recommended by the resin manufacturer, during which time the recirculation of the water and cycling of the heat source to maintain the temperature continues.

3. Prior to any inversion, the Contractor shall provide a ***Post-Cure Hold Time and Temperature Table***. This table shall indicate the minimum time and temperature the inverted tube will be held at in order to achieve desired physical properties. The resin manufacturer shall certify both the time and temperatures presented in the table.

4. Curing must take into account the existing pipe material, the resin system, and the ground conditions (temperature, moisture level, and thermal conductivity of the soil).

6.11 Curing - Using Controlled Steam

1. Suitable steam-generating equipment is required to distribute steam throughout the pipe. The equipment shall be capable of delivering steam throughout the inverted tube to uniformly raise the temperature required to affect a cure of the resin.

2. ***Initial cure*** will occur during temperature heat-up and is completed when exposed portions of the new pipe appear to be hard and sound and the thermocouples indicate that the temperature is of a magnitude to realize an exotherm or cure in the resin. After initial cure is reached, the temperature should be raised to the post-cure temperature recommended by the resin manufacturer. Post-Cure temperature should be held for a period as recommended by the resin manufacturer, during which time the distribution and control of steam to maintain the temperature continues.

3. Prior to any inversion, the Contractor shall provide a ***Post-Cure Hold Time and Temperature Table***. This table shall indicate the minimum time and temperature the inverted tube will be held at in order to achieve desired physical properties. The resin manufacturer shall certify both the time and temperatures on the table.

4. The Time and Temperature Table submitted when using steam curing shall be identical to time and temperature hold times when curing with heated, circulated water.

5. Curing must take into account the existing pipe material, the resin system, and the ground conditions (temperature, moisture level, and thermal conductivity of the soil).

6.12 Cool-Down

Cool-down of CIPP shall be in accordance with the manufacturer's recommendations. Care should be taken during the cool-down process so as to minimize shrinkage of the CIPP.

6.13 Lateral Service Reinstatement

After the CIPP has been cured, the existing service connections and laterals shall be reinstated. In general, reinstatement of service connections and laterals shall be accomplished internally, without surface excavation, using a remote control cutting device equipped with a television monitor. Reopened services shall be wire brushed to the satisfaction of the Owner/Engineer. In some cases, remote reinstatement may not be possible. In these instances, reinstatement by conventional methods in accordance with the standard Specifications is acceptable. All connections must be reinstated by at least 95-percent of the original opening.

6.14 Appearance of Finished CIPP

All workmanship and materials will meet the standards of the industry. The finished CIPP shall be continuous over the length of pipe between two manholes and shall be an impermeable, joint-less conduit, free from visual defects such as foreign inclusions, dry spots, pin holes, lifts, or delamination. Wrinkles in the CIPP, (other than minor, longitudinal pressure wrinkles) will not be acceptable. The Owner/Engineer shall determine as to the acceptability of pressure wrinkling with that decision being

final. In the event the finished liner does not fit tightly against the original pipe at its termination point(s), the space between the liner and the pipe shall be made watertight, utilizing manhole end seals, Hydro-Tite® gaskets, or approved equal.

6.15 Acceptance Testing of CIPP

1. The Owner/Engineer may, at their discretion, direct the Contractor to collect samples of the cured CIPP for laboratory determination of flexural strength, flexural modulus and wall thickness for each test sample during the execution of this Contract. These three individual analyses shall comprise one completed test. All samples shall be collected per the sampling protocols set forth in ASTM F-1216.

2. Upon notification by the Engineer, the Contractor shall remove one restrained sample of the installed liner at least 12 inches in length for testing. For sewers 15 inches and larger, plate samples may be taken and cured in the same water as the installed CIPP. For each sample taken, the Contractor shall cut and deliver a 1-inch wide representative sample (taken at least 2 inches from the end of the specimen) to the Engineer. The sample delivered to the Engineer shall be labeled and removed from any restraining mold. The Engineer may return such samples to the Contractor for disposal.

3. The tests shall be used to verify that the installed CIPP meets these specifications. CIPP thickness shall be measured in accordance with ASTM D5813. Flexural properties shall be determined per ASTM D790. The Contractor shall label and date all samples and deliver the samples directly to the Owner/Engineer. All testing shall be performed by an independent, ASTM-certified testing laboratory of the Owner/Engineer's designation and at the Owner's expense. Payment to the Contractor shall be withheld pending the Owner/Engineer's acceptance of the CIPP test results.

4. Any liner that does not meet the specified strength and/or thickness requirements, regardless of the amount below the specified requirements, shall be corrected by the Contractor in a manner approved by the Owner/Engineer at no additional cost to the Owner. The Owner/Engineer's decision on how to correct deficient CIPP installations shall be final.

6.16 Traffic Control

The Contractor shall be responsible for traffic control during the course of each phase of the Work. Prior to beginning Work, Contractor shall submit a traffic control plan for each section of Work to the Owner for the review and approval. It is the intent that this Work is to be accomplished with as little disturbance to traffic, private property, and the public as is reasonably possible, consistent with timely completion thereof. The traffic control plan shall reflect such requirements where applicable. Signs, signals, and detours shall conform to the Kentucky Department of Highways & Public Transportation requirements for streets and highways within the jurisdiction of the Sanitation District No. 1 of Northern Kentucky.

Part 7 Warranty

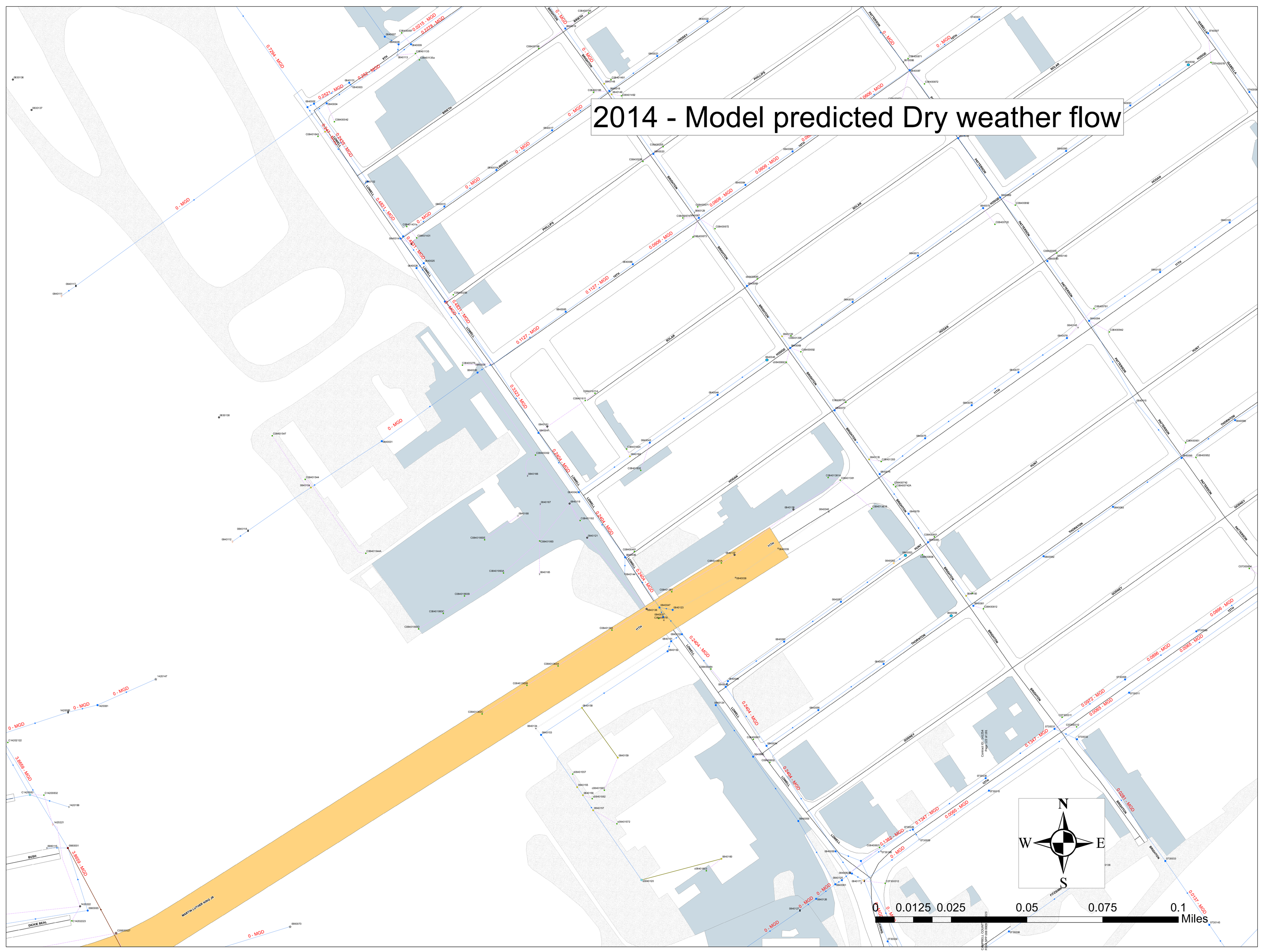
The Contractor shall warrant all work and materials installed under this contract for FIVE (5) years from the date of final acceptance. The date of final acceptance shall be the date final payment is made to the Contractor.

Part 8 Payment for Work

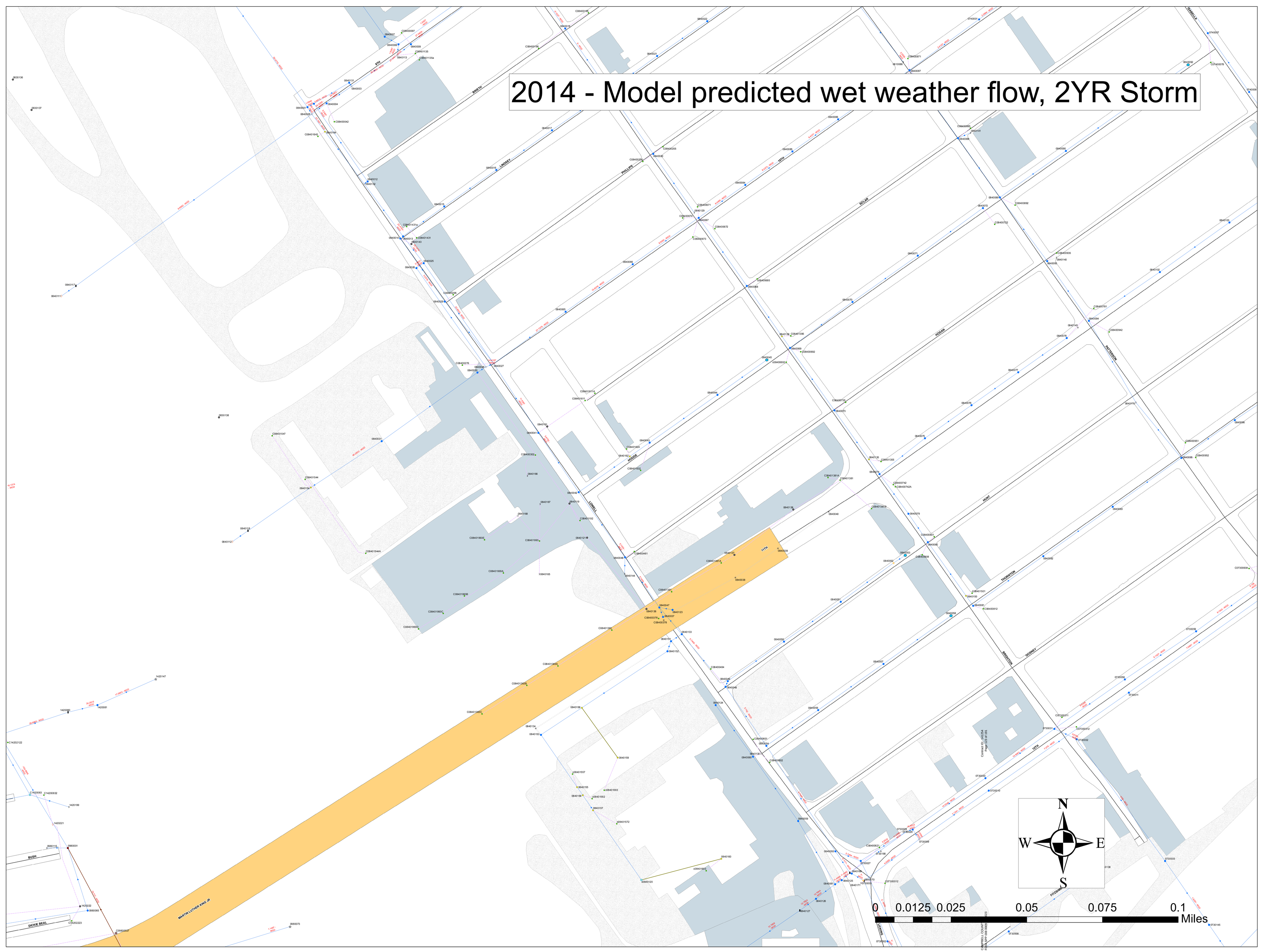
Payment for Cured-In-Place pipe shall be based on the unit prices per linear foot by size of sewer, complete in place, as shown on the Bid Pricing Form. The unit bid price shall be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

END OF SECTION

2014 - Model predicted Dry weather flow



2014 - Model predicted wet weather flow, 2YR Storm



Kentucky Transportation Cabinet

Highway District 6

And

_____(2), Construction

Kentucky Pollutant Discharge Elimination System
Permit KYR10
Best Management Practices (BMP) plan

Groundwater protection plan

For Highway Construction Activities

For

KY 9 in Newport, Reconstruction

Project: PCN ## -
Item 06-8101.10

KyTC BMP Plan for Project PCN ## -

Project information

Note – (1) = Design (2) = Construction (3) = Contractor

1. Owner – Kentucky Transportation Cabinet, District 6

2. Resident Engineer: (2)

3. Contractor name: (2)
   Address: (2)

   Phone number: (2)
   Contact: (2)
   Contractors agent responsible for compliance with the KPDES permit requirements (3):

4. Project Control Number (2)

5. Route (Address) KY 1120

6. Latitude/Longitude (project mid-point) dd/mm/ss, dd/mm/ss 39^04’52” north, 84^29’53” west

7. County (project mid-point) Campbell County

8. Project start date (date work will begin): (2)

9. Projected completion date: (2)

KyTC BMP Plan for Project PCN ## - ####

A. Site description:

1. Nature of Construction Activity (from letting project description) Roadway reconstruction

2. Order of major soil disturbing activities (2) and (3)

3. Projected volume of material to be moved 13,504 CY

4. Estimate of total project area (acres) 6.9 Acres

5. Estimate of area to be disturbed (acres) 6.9 Acres

6. Post construction runoff coefficient will be included in the project drainage folder. Persons needing information pertaining to the runoff coefficient will contact the resident engineer to request this information. 0.4

7. Data describing existing soil condition (2)

8. Data describing existing discharge water quality (if any) (2)

9. Receiving water name, Ohio and Licking Rivers

10. TMDLs and Pollutants of Concern in Receiving Waters: (1 DEA)

11. Site map – Project layout sheet plus the erosion control sheets in the project plans that depict Disturbed Drainage Areas (DDAs) and related information. These sheets depict the existing project conditions with areas delineated by DDA (drainage area bounded by watershed breaks and right of way limits), the storm water discharge locations (either as a point discharge or as overland flow) and the areas that drain to each discharge point. These plans define the limits of areas to be disturbed and the location of control measures. Controls will be either site specific as designated by the designer or will be annotated by the contractor and resident engineer before disturbance commences. The project layout sheet shows the surface waters and wetlands.

12. Potential sources of pollutants:

The primary source of pollutants is solids that are mobilized during storm events. Other sources of pollutants include oil/fuel/grease from servicing and operating construction equipment, concrete washout water, sanitary wastes and trash/debris. (3)

B. Sediment and Erosion Control Measures:

1. Plans for highway construction projects will include erosion control sheets that depict Disturbed Drainage Areas (DDAs) and related information. These plan sheets will show the existing project conditions with areas delineated by DDA within the right of way limits, the discharge points and the areas that drain to each discharge point. Project managers and designers will analyze the DDAs and identify Best Management Practices (BMPs) that are site specific. The balance of the BMPs for the project will be listed in the bid documents for selection and use by the contractor on the project with approval by the resident engineer.

   Projects that do not have DDAs annotated on the erosion control sheets will employ the same concepts for development and managing BMP plans.

2. Following award of the contract, the contractor and resident engineer will annotate the erosion control sheets showing location and type of BMPs for each of the DDAs that will be disturbed at the outset of the project. This annotation will be accompanied by an order of work that reflects the order or sequence of major soil moving activities. The remaining DDAs are to be designated as “Do Not Disturb” until the contractor and resident engineer prepare the plan for BMPs to be employed. The initial BMP’s shall be for the first phase (generally Clearing and Grubbing) and shall be modified as needed as the project changes phases. The BMP Plan will be modified to reflect disturbance in additional DDA’s as the work progresses. <u>All DDA’s will have adequate BMP’s in place before being disturbed.</u>

3. As DDAs are prepared for construction, the following will be addressed for the project as a whole or for each DDA as appropriate:

   - Construction Access – This is the first land-disturbing activity. As soon as construction begins, bare areas will be stabilized with gravel and temporary mulch and/or vegetation.
   - At the beginning of the project, all DDAs for the project will be inspected for areas that are a source of storm water pollutants. Areas that are a source of pollutants will receive appropriate cover or BMPs to arrest the introduction of pollutants into storm water. Areas that have not been opened by the contractor will be inspected periodically (once per month) to determine if there is a need to employ BMPs to keep pollutants from entering storm water.

KyTC BMP Plan for Project PCN ## - ####

- Clearing and Grubbing – The following BMP's will be considered and used where appropriate.
  - Leaving areas undisturbed when possible.
  - Silt basins to provide silt volume for large areas.
  - Silt Traps Type A for small areas.
  - Silt Traps Type C in front of existing and drop inlets which are to be saved
  - Diversion ditches to catch sheet runoff and carry it to basins or traps or to divert it around areas to be disturbed.
  - Brush and/or other barriers to slow and/or divert runoff.
  - Silt fences to catch sheet runoff on short slopes. For longer slopes, multiple rows of silt fence may be considered.
  - Temporary Mulch for areas which are not feasible for the fore mentioned types of protections.
  - Non-standard or innovative methods.
- Cut & Fill and placement of drainage structures - The BMP Plan will be modified to show additional BMP's such as:
  - Silt Traps Type B in ditches and/or drainways as they are completed
  - Silt Traps Type C in front of pipes after they are placed
  - Channel Lining
  - Erosion Control Blanket
  - Temporary mulch and/or seeding for areas where construction activities will be ceased for 21 days or more.
  - Non-standard or innovative methods
- Profile and X-Section in place – The BMP Plan will be modified to show elimination of BMP's which had to be removed and the addition of new BMP's as the roadway was shaped. Probably changes include:
  - Silt Trap Type A, Brush and/or other barriers, Temporary Mulch, and any other BMP which had to be removed for final grading to take place.
  - Additional Silt Traps Type B and Type C to be placed as final drainage patterns are put in place.
  - Additional Channel Lining and/or Erosion Control Blanket.
  - Temporary Mulch for areas where Permanent Seeding and Protection cannot be done within 21 days.
  - Special BMP's such as Karst Policy
- Finish Work (Paving, Seeding, Protect, etc.) – A final BMP Plan will result from modifications during this phase of construction. Probably changes include:
  - Removal of Silt Traps Type B from ditches and drainways if they are protected with other BMP's which are sufficient to control erosion, i.e. Erosion Control Blanket or Permanent Seeding and Protection on moderate grades.

- Permanent Seeding and Protection
- Placing Sod
- Planting trees and/or shrubs where they are included in the project

➢ BMP's including Storm Water Management Devices such as velocity dissipation devices and Karst policy BMP's to be installed during construction to control the pollutants in storm water discharges that will occur after construction has been completed are : N/A

C. Other Control Measures

1. No solid materials, including building materials, shall be discharged to waters of the commonwealth, except as authorized by a Section 404 permit.

2. Waste Materials

All waste materials that may leach pollutants (paint and paint containers, caulk tubes, oil/grease containers, liquids of any kind, soluble materials, etc.) will be collected and stored in appropriate covered waste containers. Waste containers shall be removed from the project site on a sufficiently frequent basis as to not allow wastes to become a source of pollution. All personnel will be instructed regarding the correct procedure for waste disposal. Wastes will be disposed in accordance with appropriate regulations. Notices stating these practices will be posted in the office.

3. Hazardous Waste

All hazardous waste materials will be managed and disposed of in the manner specified by local or state regulation. The contractor shall notify the Resident Engineer if there any hazardous wastes being generated at the project site and how these wastes are being managed. Site personnel will be instructed with regard to proper storage and handling of hazardous wastes when required. The Transportation Cabinet will file for generator, registration when appropriate, with the Division of Waste Management and advise the contractor regarding waste management requirements.

4. Spill Prevention

The following material management practices will be used to reduce the risk of spills or other exposure of materials and substances to the weather and/or runoff.

➢ **Good Housekeeping:**

The following good housekeeping practices will be followed onsite during the construction project.

- An effort will be made to store only enough product required to do the job
- All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure
- Products will be kept in their original containers with the original manufacturer's label
- Substances will not be mixed with one another unless recommended by the manufacturer
- Whenever possible, all of the product will be used up before disposing of the container
- Manufacturers' recommendations for proper use and disposal will be followed
- The site contractor will inspect daily to ensure proper use and disposal of materials onsite

➢ **Hazardous Products:**

These practices will be used to reduce the risks associated with any and all hazardous materials.

- Products will be kept in original containers unless they are not resealable
- Original labels and material safety data sheets (MSDS) will be reviewed and retained
- Contractor will follow procedures recommended by the manufacturer when handling hazardous materials
- If surplus product must be disposed of, manufacturers' or state/local recommended methods for proper disposal will be followed

The following product-specific practices will be followed onsite:

➢ **Petroleum Products:**

Vehicles and equipment that are fueled and maintained on site will be monitored for leaks, and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products onsite will be stored in tightly sealed containers, which are clearly labeled and will be protected from exposure to weather.

The contractor shall prepare an Oil Pollution Spill Prevention Control and Countermeasure plan when the project that involves the storage of petroleum products in 55 gallon or larger containers with a total combined storage capacity of 1,320 gallons. This is a requirement of 40 CFR 112.

This project (will / will not) (3) have over 1,320 gallons of petroleum products with a total capacity, sum of all containers 55 gallon capacity and larger.

- **Fertilizers:**

Fertilizers will be applied at rates prescribed by the contract, standard specifications or as directed by the resident engineer. Once applied, fertilizer will be covered with mulch or blankets or worked into the soil to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

- **Paints:**

All containers will be tightly sealed and stored indoors or under roof when not being used. Excess paint or paint wash water will not be discharged to the drainage or storm sewer system but will be properly disposed of according to manufacturers' instructions or state and local regulations.

- **Concrete Truck Washout:**

Concrete truck mixers and chutes will not be washed on pavement, near storm drain inlets, or within 75 feet of any ditch, stream, wetland, lake, or sinkhole. Where possible, excess concrete and wash water will be discharged to areas prepared for pouring new concrete, flat areas to be paved that are away from ditches or drainage system features, or other locations that will not drain off site. Where this approach is not possible, a shallow earthen wash basin will be excavated away from ditches to receive the wash water

- **Spill Control Practices**

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup**:**

- Manufacturers' recommended methods for spill cleanup will be clearly posted. All personnel will be made aware of procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area. Equipment and materials will include as appropriate, brooms, dust pans, mops, rags, gloves, oil absorbents, sand, sawdust, and plastic and metal trash containers.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contract with a hazardous substance.

- Spills of toxic or hazardous material will be reported to the appropriate state/local agency as required by KRS 224 and applicable federal law.
- The spill prevention plan will be adjusted as needed to prevent spills from reoccurring and improve spill response and cleanup.
- Spills of products will be cleaned up promptly. Wastes from spill clean up will be disposed in accordance with appropriate regulations.

D. Other State and Local Plans

This BMP plan shall include any requirements specified in sediment and erosion control plans, storm water management plans or permits that have been approved by other state or local officials. Upon submittal of the NOI, other requirements for surface water protection are incorporated by reference into and are enforceable under this permit (even if they are not specifically included in this BMP plan). This provision does not apply to master or comprehensive plans, non-enforceable guidelines or technical guidance documents that are not identified in a specific plan or permit issued for the construction site by state or local officials.

E. Maintenance

1. The BMP plan shall include a clear description of the maintenance procedures necessary to keep the control measures in good and effective operating condition.

- Maintenance of BMPs during construction shall be a result of weekly and post rain event inspections with action being taken by the contractor to correct deficiencies.

- Post Construction maintenance will be a function of normal highway maintenance operations. Following final project acceptance by the cabinet, district highway crews will be responsible for identification and correction of deficiencies regarding ground cover and cleaning of storm water BMPs. The project manager shall identify any BMPs that will be for the purpose of post construction storm water management with specific guidance for any non-routine maintenance.

F. Inspections

Inspection and maintenance practices that will be used to maintain erosion and sediment controls:

- All erosion prevention and sediment control measures will be inspected at least once each week and following any rain of one-half inch or more.
- Inspections will be conducted by individuals that have received KyTC Grade Level II training or other qualification as prescribed by the cabinet that includes instruction concerning sediment and erosion control.
- Inspection reports will be written, signed, dated, and kept on file.
- Areas at final grade will be seeded and mulched within 14 days.
- Areas that are not at final grade where construction has ceased for a period of 21 days or longer and soil stock piles shall receive temporary mulch no later than 14 days from the last construction activity in that area.
- All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of being reported.
- Built-up sediment will be removed from behind the silt fence before it has reached halfway up the height of the fence.
- Silt fences will be inspected for bypassing, overtopping, undercutting, depth of sediment, tears, and to ensure attachment to secure posts.
- Sediment basins will be inspected for depth of sediment, and built-up sediment will be removed when it reaches 70 percent of the design capacity and at the end of the job.
- Diversion dikes and berms will be inspected and any breaches promptly repaired. Areas that are eroding or scouring will be repaired and re-seeded / mulched as needed.
- Temporary and permanent seeding and mulching will be inspected for bare spots, washouts, and healthy growth. Bare or eroded areas will be repaired as needed.
- All material storage and equipment servicing areas that involve the management of bulk liquids, fuels, and bulk solids will be inspected weekly for conditions that represent a release or possible release of pollutants to the environment.

G. Non – Storm Water discharges

It is expected that non-storm water discharges may occur from the site during the construction period. Examples of non-storm water discharges include:

- Water from water line flushings.
- Water form cleaning concrete trucks and equipment.
- Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred).

- Uncontaminated groundwater and rain water (from dewatering during excavation).

All non-storm water discharges will be directed to the sediment basin or to a filter fence enclosure in a flat vegetated infiltration area or be filtered via another approved commercial product.

H. Groundwater Protection Plan (3)

This plan serves as the groundwater protection plan as required by 401 KAR 5:037.

- Contractors statement: (3)

The following activities, as enumerated by 401 KAR 5:037 Section 2 that require the preparation and implementation of a groundwater protection plan, will or may be may be conducted as part of this construction project:

_____ 2. (e) land treatment or land disposal of a pollutant;

_____ 2. (f) Storing, …, or related handling of hazardous waste, solid waste or special waste, …, in tanks, drums, or other containers, or in piles, (This does not include wastes managed in a container placed for collection and removal of municipal solid waste for disposal off site);

_____ 2. (g) …. Handling of materials in bulk quantities (equal or greater than 55 gallons or 100 pounds net dry weight transported held in an individual container) that, if released to the environment, would be a pollutant;

_____ 2. (j) Storing or related handling of road oils, dust suppressants, …., at a central location;

_____ 2. (k) Application or related handling of road oils, dust suppressants or deicing materials, (does not include use of chloride-based deicing materials applied to roads or parking lots);

_____ 2. (m) Installation, construction, operation, or abandonment of wells, bore holes, or core holes, (this does not include bore holes for the purpose of explosive demolition);

Or, check the following only if there are no qualifying activities

_____ There are no activities for this project as listed in 401 KAR 5:037 Section 2 that require the preparation and implementation of a groundwater protection plan.

KyTC BMP Plan for Project PCN ## - ####

The contractor is responsible for the preparation of a plan that addresses the

401 KAR 5:037 Section 3. (3) Elements of site specific groundwater protection plan:

(a) General information about this project is covered in the Project information;
(b) Activities that require a groundwater protection plan have been identified above;
(c) Practices that will protect groundwater from pollution are addressed in section C. Other control measures.
(d) Implementation schedule – all practices required to prevent pollution of groundwater are to be in place prior to conducting the activity;
(e) Training is required as a part of the ground water protection plan. All employees of the contractor, sub-contractor and resident engineer personnel will be trained to understand the nature and requirements of this plan as they pertain to their job function(s). Training will be accomplished within one week of employment and annually thereafter. A record of training will be maintained by the contractor with a copy provide to the resident engineer.
(f) Areas of the project and groundwater plan activities will be inspected as part of the weekly sediment and erosion control inspections
(g) Certification (see signature page.)

KyTC BMP Plan for Project PCN ## - ####

Contractor and Resident Engineer Plan certification

The contractor that is responsible for implementing this BMP plan is identified in the Project Information section of this plan.

The following certification applies to all parties that are signatory to this BMP plan:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Further, this plan complies with the requirements of 401 KAR 5:037. By this certification, the undersigned state that the individuals signing the plan have reviewed the terms of the plan and will implement its provisions as they pertain to ground water protection.

Resident Engineer and Contractor Certification:

(2) Resident Engineer signature

Signed _____title_____, _____
Typed or printed name[2] signature

(3) Signed _____title_____, _____
Typed or printed name[1] signature

1. Contractors Note: to be signed by a person who is the owner, a responsible corporate officer, a general partner or the proprietor or a person designated to have the authority to sign reports by such a person in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Kentucky 40601. Reference the Project Control Number (PCN) and KPDES number when one has been issued.

2. KyTC note: to be signed by the Chief District Engineer or a person designated to have the authority to sign reports by such a person (usually the resident engineer) in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Kentucky 40601 Reference the Project Control Number (PCN) and KPDES number when one has been issued.

Sub-Contractor Certification

The following sub-contractor shall be made aware of the BMP plan and responsible for implementation of BMPs identified in this plan as follows:

Subcontractor

Name:
Address:
Address:

Phone:

The part of BMP plan this subcontractor is responsible to implement is:

I certify under penalty of law that I understand the terms and conditions of the general Kentucky Pollutant Discharge Elimination System permit that authorizes the storm water discharges, the BMP plan that has been developed to manage the quality of water to be discharged as a result of storm events associated with the construction site activity and management of non-storm water pollutant sources identified as part of this certification.

Signed _____title_____, _____
Typed or printed name[1] signature

1. Sub Contractor Note: to be signed by a person who is the owner, a responsible corporate officer, a general partner or the proprietor or a person designated to have the authority to sign reports by such a person in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Kentucky 40601. Reference the Project Control Number (PCN) and KPDES number when one has been issued.

DEP Department For Environmental Protection

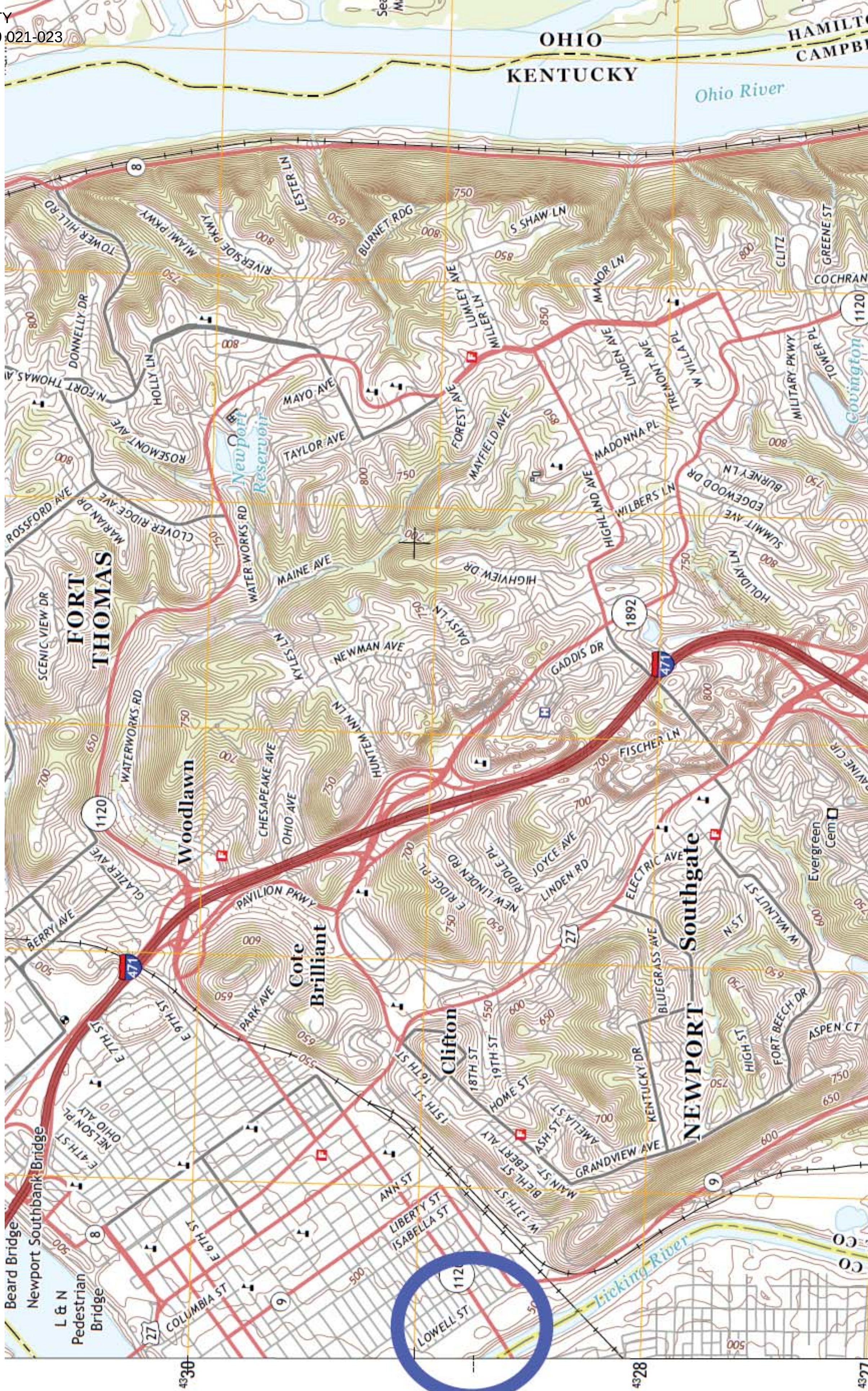
Welcome to the Department for Environmental Protection eForms Application.

USERSAVED

You have selected the following electronic form (eForm): KPDES FORM NOI-SW (Construction): (KPDES Notice of Intent (NOI) for Stormwater Discharges Associated with Construction Activity Under the KPDES General Permit). You may continue with a blank eForm by clicking on the "Continue with Blank eForm" button below or retrieve a previously saved version by entering your eForm Transaction ID in the field provided below.

Option A: Select this option to fill out a blank eForm.	Continue with Blank eForm
Option B: Select this option to retrieve a previously saved or submitted eForm. The check box allows you to use previously saved/submitted eForms as a "template". The system will generate a new eForm Transaction ID and allow you to submit the new form to DEP.	Enter your eForm Transaction ID to retreive the latest version of your form: 620ab050-02b5-4cd0-aa75-87972f2f6c23 ☐ I want a NEW eForm with the values from the previously saved/submitted ID. Proceed

User Interface issues: 1. Please use a non-Internet Explorer Browser. Users of Internet Explorer Browser must use version 9 or greater and may experience problems when using this website due to known issues with the browser. IE users must verify that Compatibility View Settings is turned OFF. 2. This website requires Flash. 3. For Security reasons, the website only supports 45 minutes to complete data entry at any given time and will 'timeout', preventing the ability to save or submit your data. Please keep this in mind when filling out an eForm. 4. Please note that the Internet Explorer Browser uses the Backspace


OHIO
KENTUCKY
HAMILTO
CAMPBE
Ohio River
8
LESTER LN
TOWER HILL RD
MIAMI PKWY
RIVERSIDE PKWY
BURNET RDG
S SHAW LN
LUMLEY AVE
MILLER LN
MANOR LN
CLITZ
GREENE ST
COCHRAN
1120
DONNELLY DR
HOLLY LN
N FORT THOMAS AVE
MAYO AVE
TAYLOR AVE
ROSEMONT AVE
Newport Reservoir
FOREST AVE
MAYFIELD AVE
LINDEN AVE
TREMONT AVE
W VILLA PL
MILITARY PKWY
TOWER PL
MADONNA PL
HIGHLAND AVE
WILBERS LN
BURNEY LN
EDGEWOOD DR
SUMMIT AVE
ROSSFORD AVE
MARIAN DR
CLOVER RIDGE AVE
WATER WORKS RD
MAINE AVE
HIGHVIEW DR
HOLIDAY LN
FORT THOMAS
SCENIC VIEW DR
DAISY LN
1892
KYLES LN
NEWMAN AVE
GADDIS DR
471
WATERWORKS RD
HUNTEMANN LN
FISCHER LN
RAVINE CIR
Woodlawn
CHESAPEAKE AVE
OHIO AVE
JOYCE AVE
LINDEN RD
RIDDLE PL
NEW LINDEN RD
E RIDGE PL
ELECTRIC AVE
Southgate
Evergreen Cem
GLAZIER AVE
BERRY AVE
PAVILION PKWY
27
N ST
W WALNUT ST
Cote Brilliant
PARK AVE
BLUEGRASS AVE
E 9TH ST
E 7TH ST
Clifton
18TH ST
19TH ST
16TH ST
15TH ST
HOME ST
KENTUCKY DR
NEWPORT
HIGH ST
FORT BEECH DR
ASPEN CT
NELSON PL
OHIO ALY
E 4TH ST
ASH ST
AMELIA ST
EBERT ALY
GRANDVIEW AVE
BIEHL ST
MAIN ST
W 13TH ST
ANN ST
LIBERTY ST
ISABELLA ST
9
Licking River
Newport Southbank Bridge
Beard Bridge
L & N Pedestrian Bridge
COLUMBIA ST
LOWELL ST
4330
4328
4327
5'

KENTUCKY TRANSPORTATION CABINET
COMMUNICATING ALL PROMISES (CAP)
ACTIVE

Item No. 6 - 8101.1 **Project Mgr.**

County CAMPBELL **Route** KY-9

CAP #	Date of Promise	Promise made to:	Location of Promise
1	12-FEB-14	City of Newport	Parcel 82

CAP Description

A 24 FOOT WIDE RIGHT IN/RIGHT OUT ENTRANCE WILL BE CONSTRUCTED APPROXIMATELY 30 FEET NORTH OF THE SUBJECT PROPERTY'S SOUTH PROPERTY LINE.

2	17-MAR-14	RK Land Management	Parcel 77

CAP Description

THE STATE AGREES TO INSTALL A 24' WIDE RIGHT-IN, RIGHT-OUT ENTRANCE IN CENTER OF VACANT LOT LOCATED ON NORTHEAST SIDE OF LOWELL STREET, CURRENTLY LEASED BY RIVER METALS RECYCLING, LLC. THE STATE AGREES TO EXTEND ENTRANCE NOTED ON PLANS AT LEFT OF STATION 24+00 FOR THE IMPROVED PARCEL LOCATED ON THE SOUTHWEST SIDE OF LOWELL STREET, CURRENTLY BEING PURCHASED ON LAND CONTRACT FOR NEW RIVER PROPERTIES, LLC, TO PROVIDE INGRESS AND EGRESS TO BOTH THE FRONT AND REAR OF THE BUILDING LOCATED ON THE NOTED LOT. SAID ENTRANCE IS TO EXTENDED APPROXIMATELY 180 LINEAR FEET.

3	23-JUN-14	Duke Energy	Solar Alley North

CAP Description

THE CONTRACTOR WILL INSTALL ALL CONDUIT FOR UNDERGROUND UTILITIES NORTH OF, AND INCLUDING THOSE UNDER, SOLAR ALLEY BEFORE DECEMBER 1, 2014. THESE CROSSING INCLUDE THOSE CROSSING NEW KY 9 AT SOLAR ALLEY, 10TH STREET, AND 9TH STREET AND THOSE UNDER BLEITH ALLEY.

PART II

SPECIFICATIONS AND STANDARD DRAWINGS

SPECIFICATIONS REFERENCE

Any reference in the plans or proposal to previous editions of the *Standard Specifications for Road and Bridge Construction* and *Standard Drawings* are superseded by *Standard Specifications for Road and Bridge Construction, Edition of 2012* and *Standard Drawings, Edition of 2012 with the 2012 Revision.*

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Subsection:	102.15 Process Agent.
Revision:	Replace the 1st paragraph with the following: Every corporation doing business with the Department shall submit evidence of compliance with KRS Sections 14A.4-010, 271B.11-010, 271B.11-070, 271B.11-080, 271B.5-010 and 271B.16-220, and file with the Department the name and address of the process agent upon whom process may be served.
Subsection:	105.13 Claims Resolution Process.
Revision:	Delete all references to TC 63-34 and TC 63-44 from the subsection as these forms are no longer available through the forms library and are forms generated within the AASHTO SiteManager software.
Subsection:	108.03 Preconstruction Conference.
Revision:	Replace 8) Staking with the following: 8) Staking (designated by a Professional Engineer or Land Surveyor licensed in the Commonwealth of Kentucky.
Subsection:	109.07.02 Fuel.
Revision:	Revise item Crushed Aggregate Used for Embankment Stabilization to the following: Crushed Aggregate Used for Stabilization of Unsuitable Materials Used for Embankment Stabilization
	Delete the following item from the table. ~~Crushed Sandstone Base (Cement Treated)~~
Subsection:	110.02 Demobilization.
Revision:	Replace the first part of the first sentence of the second paragraph with the following: Perform all work and operations necessary to accomplish final clean-up as specified in the first paragraph of Subsection 105.12;
Subsection:	112.03.12 Project Traffic Coordinator (PTC).
Revision:	Replace the last paragraph of this subsection with the following: Ensure the designated PTC has sufficient skill and experience to properly perform the task assigned and has successfully completed the qualification courses.
Subsection:	112.04.18 Diversions (By-Pass Detours).
Revision:	Insert the following sentence after the 2nd sentence of this subsection. The Department will not measure temporary drainage structures for payment when the contract documents provide the required drainage opening that must be maintained with the diversion. The temporary drainage structures shall be incidental to the construction of the diversion. If the contract documents fail to provide the required drainage opening needed for the diversion, the cost of the temporary drainage structure will be handled as extra work in accordance with section 109.04.
Subsection:	201.03.01 Contractor Staking.
Revision:	Replace the first paragraph with the following: Perform all necessary surveying under the general supervision of a Professional Engineer or Land Surveyor licensed in the Commonwealth of Kentucky.

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Subsection:	201.04.01 Contractor Staking.
Revision:	Replace the last sentence of the paragraph with the following: Complete the general layout of the project under the supervision of a Professional Engineer or Land Surveyor licensed in the Commonwealth of Kentucky.
Subsection:	206.04.01 Embankment-in-Place.
Revision:	Replace the fourth paragraph with the following: The Department will not measure **suitable** excavation included in the original plans that is disposed of for payment and will consider it incidental to Embankment-in-Place.
Subsection:	208.02.01 Cement.
Revision:	Replace paragraph with the following: Select Type I or Type II cement conforming to Section 801. Use the same type cement throughout the work.
Subsection:	208.03.06 Curing and Protection.
Revision:	Replace the fourth paragraph with the following: Do not allow traffic or equipment on the finished surface until the stabilized subgrade has cured for a total of 7-days with an ambient air temperature above 40 degrees Fahrenheit. A curing day consists of a continuous 24-hour period in which the ambient air temperature does not fall below 40 degrees Fahrenheit. Curing days will not be calculated consecutively, but must total seven (7) , 24-hour days with the ambient air temperature remaining at or above 40 degrees Fahrenheit before traffic or equipment will be allowed to traverse the stabilized subgrade. The Department may allow a shortened curing period when the Contractor requests. The Contractor shall give the Department at least 3 day notice of the request for a shortened curing period. The Department will require a minimum of 3 curing days after final compaction. The Contractor shall furnish cores to the treated depth of the roadbed at 500 feet intervals for each lane when a shortened curing time is requested. The Department will test cores using an unconfined compression test. Roadbed cores must achieve a minimum strength requirement of 80 psi.
Subsection:	208.03.06 Curing and Protection.
Revision:	Replace paragraph eight with the following: At no expense to the Department, repair any damage to the subgrade caused by freezing.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	A) Seed Mixtures for Permanent Seeding.
Revision:	Revise **Seed Mix Type I** to the mixture shown below: 50% Kentucky 31 Tall Fescue (Festuca arundinacea) 35% Hard Fescue (Festuca (Festuca longifolia) 10% Ryegrass, Perennial (Lolium perenne) 5% White Dutch Clover (Trifolium repens)
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	A) Seed Mixtures for Permanent Seeding.
Number:	2)
Revision:	Replace the paragraph with the following: Permanent Seeding on Slopes Greater than 3:1 in Highway Districts 4, 5, 6, and 7. Apply seed mix Type II at a minimum application rate of 100 pounds per acre. If adjacent to a golf course replace the crown vetch with Kentucky 31 Tall Fescue.

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Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	A) Seed Mixtures for Permanent Seeding.
Number:	3)
Revision:	Replace the paragraph with the following: Permanent Seeding on Slopes Greater than 3:1 in Highway Districts 1, 2, 3, 8, 9, 10, 11, and 12. Apply seed mix Type III at a minimum application rate of 100 pounds per acre. If adjacent to crop land or golf course, replace the Sericea Lespedeza with Kentucky 31 Fescue.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	B) Procedures for Permanent Seeding.
Revision:	Delete the first sentence of the section.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	B) Procedures for Permanent Seeding.
Revision:	Replace the second and third sentence of the section with the following: Prepare a seedbed and apply an initial fertilizer that contains a minimum of 100 pounds of nitrogen, 100 pounds of phosphate, and 100 pounds of potash per acre. Apply agricultural limestone to the seedbed when the Engineer determines it is needed. When required, place agricultural limestone at a rate of 3 tons per acre.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	D) Top Dressing.
Revision:	Change the title of part to D) Fertilizer.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	D) Fertilizer.
Revision:	Replace the first paragraph with the following: Apply fertilizer at the beginning of the seeding operation and after vegetation is established. Use fertilizer delivered to the project in bags or bulk. Apply initial fertilizer to all areas prior to the seeding or sodding operation at the application rate specified in 212.03.03 B). Apply 20-10-10 fertilizer to the areas after vegetation has been established at a rate of 11.5 pounds per 1,000 square feet. Obtain approval from the Engineer prior to the 2nd fertilizer application. Reapply fertilizer to any area that has a streaked appearance. The reapplication shall be at no additional cost to the Department. Re-establish any vegetation severely damaged or destroyed because of an excessive application of fertilizer at no cost to the Department.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	D) Fertilizer.
Revision:	Delete the second paragraph.
Subsection:	212.04.04 Agricultural Limestone.
Revision:	Replace the entire section with the following: The Department will measure the quantity of agricultural limestone in tons.
Subsection:	212.04.05 Fertilizer.
Revision:	Replace the entire section with the following: The Department will measure fertilizer used in the seeding or sodding operations for payment. The Department will measure the quantity by tons.

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Subsection:	212.05 PAYMENT.
Revision:	Delete the following item code:
	Code Pay Item Pay Unit
	05966 Topdressing Fertilizer Ton
Subsection:	212.05 PAYMENT.
Revision:	Add the following pay items:
	Code Pay Item Pay Unit
	05963 Initial Fertilizer Ton
	05964 20-10-10 Fertilizer Ton
	05992 Agricultural Limestone Ton
Subsection:	213.03.02 Progress Requirements.
Revision:	Replace the last sentence of the third paragraph with the following:
	Additionally, the Department will apply a penalty equal to the liquidated damages when all aspects of the work are not coordinated in an acceptable manner within 7 calendar days after written notification.
Subsection:	213.03.05 Temporary Control Measures.
Part:	E) Temporary Seeding and Protection.
Revision:	Delete the second sentence of the first paragraph.
Subsection:	304.02.01 Physical Properties.
Table:	Required Geogrid Properties
Revision:	Replace all references to Test Method "GRI-GG2-87" with ASTM D 7737.
Subsection:	402.03.02 Contractor Quality Control and Department Acceptance.
Part:	B) Sampling.
Revision:	Replace the second sentence with the following:
	The Department will determine when to obtain the quality control samples using the random-number feature of the mix design submittal and approval spreadsheet. The Department will randomly determine when to obtain the verification samples required in Subsections 402.03.03 and 402.03.04 using the Asphalt Mixture Sample Random Tonnage Generator.
Subsection:	402.03.02 Contractor Quality Control and Department Acceptance.
Part:	D) Testing Responsibilities.
Number:	3) VMA.
Revision:	Add the following paragraph below Number 3) VMA:
	Retain the AV/VMA specimens and one additional corresponding G_{mm} sample for 5 working days for mixture verification testing by the Department. For Specialty Mixtures, retain a mixture sample for 5 working days for mixture verification testing by the Department. When the Department's test results do not verify that the Contractor's quality control test results are within the acceptable tolerances according to Subsection 402.03.03, retain the samples and specimens from the affected sublot(s) for the duration of the project.
Subsection:	402.03.02 Contractor Quality Control and Department Acceptance.
Part:	D) Testing Responsibilities.
Number:	4) Density.
Revision:	Replace the second sentence of the Option A paragraph with the following:
	Perform coring by the end of the following work day.

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Subsection: **Part:** **Number:** **Revision:**	402.03.02 Contractor Quality Control and Department Acceptance. D) Testing Responsibilities. 5) Gradation. Delete the second paragraph.
Subsection: **Part:** **Number:** **Revision:**	402.03.02 Contractor Quality Control and Department Acceptance. H) Unsatisfactory Work. 1) Based on Lab Data. Replace the second paragraph with the following: When the Engineer determines that safety concerns or other considerations prohibit an immediate shutdown, continue work and the Department will make an evaluation of acceptability according to Subsection 402.03.05.
Subsection: **Revision:**	402.03.03 Verification. Replace the first paragraph with the following: **402.03.03 Mixture Verification.** For volumetric properties, the Department will perform a minimum of one verification test for AC, AV, and VMA according to the corresponding procedures as given in Subsection 402.03.02. The Department will randomly determine when to obtain the verification sample using the Asphalt Mixture Sample Random Tonnage Generator. For specialty mixtures, the Department will perform one AC and one gradation determination per lot according to the corresponding procedures as given in Subsection 402.03.02. However, Department personnel will not perform AC determinations according to KM 64-405. The Contractor will obtain a quality control sample at the same time the Department obtains the mixture verification sample and perform testing according to the procedures given in Subsection 402.03.02. If the Contractor's quality control sample is verified by the Department's test results within the tolerances provided below, the Contractor's sample will serve as the quality control sample for the affected sublot. The Department may perform the mixture verification test on the Contractor's equipment or on the Department's equipment.
Subsection: **Part:** **Revision:**	402.03.03 Verification. A) Evaluation of Sublot(s) Verified by Department. Replace the third sentence of the second paragraph with the following: When the paired *t* -test indicates that the Contractor's data and Department's data are possibly not from the same population, the Department will investigate the cause for the difference according to Subsection 402.03.05 and implement corrective measures as the Engineer deems appropriate.
Subsection: **Part:** **Revision:**	402.03.03 Verification. B) Evaluation of Sublots Not Verified by Department. Replace the third sentence of the first paragraph with the following: When differences between test results are not within the tolerances listed below, the Department will resolve the discrepancy according to Subsection 402.03.05.

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Subsection:	402.03.03 Verification.
Part:	B) Evaluation of Sublots Not Verified by Department.
Revision:	Replace the third sentence of the second paragraph with the following: When the *F* -test or *t* -test indicates that the Contractor's data and Department's data are possibly not from the same population, the Department will investigate the cause for the difference according to Subsection 402.03.05 and implement corrective measures as the Engineer deems appropriate.
Subsection:	402.03.03 Verification.
Part:	C) Test Data Patterns.
Revision:	Replace the second sentence with the following: When patterns indicate substantial differences between the verified and non-verified sublots, the Department will perform further comparative testing according to subsection 402.03.05.
Subsection:	402.03 CONSTRUCTION.
Revision:	Add the following subsection: **402.03.04 Testing Equipment and Technician Verification.** For mixtures with a minimum quantity of 20,000 tons and for every 20,000 tons thereafter, the Department will obtain an additional verification sample at random using the Asphalt Mixture Sample Random Tonnage Generator in order to verify the integrity of the Contractor's and Department's laboratory testing equipment and technicians. The Department will obtain a mixture sample of at least 150 lb at the asphalt mixing plant according to KM 64-425 and split it according to AASHTO R 47. The Department will retain one split portion of the sample and provide the other portion to the Contractor. At a later time convenient to both parties, the Department and Contractor will simultaneously reheat the sample to the specified compaction temperature and test the mixture for AV and VMA using separate laboratory equipment according to the corresponding procedures given in Subsection 402.03.02. The Department will evaluate the differences in test results between the two laboratories. When the difference between the results for AV or VMA is not within ± 2.0 percent, the Department will investigate and resolve the discrepancy according to Subsection 402.03.05.
Subsection:	402.03.04 Dispute Resolution.
Revision:	Change the subsection number to 402.03.05.
Subsection:	402.05 PAYMENT.
Part:	Lot Pay Adjustment Schedule Compaction Option A Base and Binder Mixtures
Table:	AC
Revision:	Replace the Deviation from JMF(%) that corresponds to a Pay Value of 0.95 to ±0.6.
Subsection:	403.02.10 Material Transfer Vehicle (MTV).
Revision:	Replace the first sentence with the following: In addition to the equipment specified above, provide a MTV with the following minimum characteristics:
Subsection:	412.02.09 Material Transfer Vehicle (MTV).
Revision:	Replace the paragraph with the following: Provide and utilize a MTV with the minimum characteristics outlined in section 403.02.10.

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Subsection: **Revision:**	412.03.07 Placement and Compaction. Replace the first paragraph with the following: Use a MTV when placing SMA mixture in the driving lanes. The MTV is not required on ramps and/or shoulders unless specified in the contract. When the Engineer determines the use of the MTV is not practical for a portion of the project, the Engineer may waive its requirement for that portion of pavement by a letter documenting the waiver.
Subsection: **Revision:**	412.04 MEASUREMENT. Add the following subsection: 412.04.03. Material Transfer Vehicle (MTV). The Department will not measure the MTV for payment and will consider its use incidental to the asphalt mixture.
Subsection: **Part:** **Revision:**	501.03.19 Surface Tolerances and Testing Surface. B) Ride Quality. Add the following to the end of the first paragraph: The Department will specify if the ride quality requirements are Category A or Category B when ride quality is specified in the Contract. Category B ride quality requirements shall apply when the Department fails to classify which ride quality requirement will apply to the Contract.
Subsection: **Revision:**	603.03.06 Cofferdams. Replace the seventh sentence of paragraph one with the following: Submit drawings that are stamped by a Professional Engineer licensed in the Commonwealth of Kentucky.
Subsection: **Revision:**	605.03.04 Tack Welding. Insert the subsection and the following: 605.03.04 Tack Welding. The Department does not allow tack welding.
Subsection: **Part:** **Number:** **Revision:**	606.03.17 Special Requirements for Latex Concrete Overlays. A) Existing Bridges and New Structures. 1) Prewetting and Grout-Bond Coat. Add the following sentence to the last paragraph: Do not apply a grout-bond coat on bridge decks prepared by hydrodemolition.
Subsection: **Revision:**	609.03 Construction. Replace Subsection 609.03.01 with the following: 609.03.01 A) Swinging the Spans. Before placing concrete slabs on steel spans or precast concrete release the temporary erection supports under the bridge and swing the span free on its supports. 609.03.01 B) Lift Loops. Cut all lift loops flush with the top of the precast beam once the beam is placed in the final location and prior to placing steel reinforcement. At locations where lift loops are cut, paint the top of the beam with galvanized or epoxy paint.
Subsection: **Revision:**	611.03.02 Precast Unit Construction. Replace the first sentence of the subsection with the following: Construct units according to ASTM C1577, **replacing Table 1 (Design Requirements for Precast Concrete Box Sections Under Earth, Dead and HL-93 Live Load Conditions) with KY Table 1 (Precast Culvert KYHL-93 Design Table)**, and Section 605 with the following exceptions and additions:

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Subsection: **Number:** **Revision:**	613.03.01 Design. 2) Replace "AASHTO Standard Specifications for Highway Bridges" with "AASHTO LRFD Bridge Design Specifications"
Subsection: **Revision:**	615.06.02 Add the following sentence to the end of the subsection. The ends of units shall be normal to walls and centerline except exposed edges shall be beveled ¾ inch.
Subsection: **Revision:**	615.06.03 Placement of Reinforcement in Precast 3-Sided Units. Replace the reference of 6.6 in the section to 615.06.06.
Subsection: **Revision:**	615.06.04 Placement of Reinforcement for Precast Endwalls. Replace the reference of 6.7 in the section to 615.06.07.
Subsection: **Revision:**	615.06.06 Laps, Welds, and Spacing for Precast 3-Sided Units. Replace the subsection with the following: Tension splices in the circumferential reinforcement shall be made by lapping. Laps may not be tack welded together for assembly purposes. For smooth welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.2 and AASHTO 2012 Bridge Design Guide Section 5.11.6.3. For deformed welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.1 and AASHTO 2012 Bridge Design Guide Section 5.11.6.2. The overlap of welded wire fabric shall be measured between the outer most longitudinal wires of each fabric sheet. For deformed billet-steel bars, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.1. For splices other than tension splices, the overlap shall be a minimum of 12" for welded wire fabric or deformed billet-steel bars. The spacing center to center of the circumferential wires in a wire fabric sheet shall be no less than 2 inches and no more than 4 inches. The spacing center to center of the longitudinal wires shall not be more than 8 inches. The spacing center to center of the longitudinal distribution steel for either line of reinforcing in the top slab shall be not more than 16 inches.
Subsection: **Revision:**	615.06.07 Laps, Welds, and Spacing for Precast Endwalls. Replace the subsection with the following: Splices in the reinforcement shall be made by lapping. Laps may not be tack welded together for assembly purposes. For smooth welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.2 and AASHTO 2012 Bridge Design Guide Section 5.11.6.3. For deformed welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.1 and AASHTO 2012 Bridge Design Guide Section 5.11.6.2. For deformed billet-steel bars, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.1. The spacing center-to-center of the wire fabric sheet shall not be less than 2 inches or more than 8 inches.

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Subsection:	615.08.01 Type of Test Specimen.
Revision:	Replace the subsection with the following: Start-up slump, air content, unit weight, and temperature tests will be performed each day on the first batch of concrete. Acceptable start-up results are required for production of the first unit. After the first unit has been established, random acceptance testing is performed daily for each 50 yd^3 (or fraction thereof). In addition to the slump, air content, unit weight, and temperature tests, a minimum of one set of cylinders shall be required each time plastic property testing is performed.
Subsection:	615.08.02 Compression Testing.
Revision:	Delete the second sentence.
Subsection:	615.08.04 Acceptability of Core Tests.
Revision:	Delete the entire subsection.
Subsection:	615.12 Inspection.
Revision:	Add the following sentences to the end of the subsection: Units will arrive at jobsite with the "Kentucky Oval" stamped on the unit which is an indication of acceptable inspection at the production facility. Units shall be inspected upon arrival for any evidence of damage resulting from transport to the jobsite.
Subsection:	716.02.02 Paint.
Revision:	Replace sentence with the following: Conform to Section 821.
Subsection:	716.03 CONSTRUCTION.
Revision:	Replace bullet 5) with the following: 5) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims,
Subsection:	716.03.02 Lighting Standard Installation.
Revision:	Replace the second sentence with the following: Regardless of the station and offset noted, locate all poles/bases behind the guardrail a minimum of four feet from the front face of the guardrail to the front face of the pole base.
Subsection:	716.03.02 Lighting Standard Installation.
Part:	A) Conventional Installation.
Revision:	Replace the third sentence with the following: Orient the transformer base so the door is positioned on the side away from on-coming traffic.
Subsection:	716.03.02 Lighting Standard Installation.
Part:	A) Conventional Installation.
Number:	1) Breakaway Installation and Requirements.
Revision:	Replace the first sentence with the following: For breakaway supports, conform to Section 12 of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.
Subsection:	716.03.02 Lighting Standard Installation.
Part:	B) High Mast Installation
Revision:	Replace the first sentence with the following: Install each high mast pole as noted on plans.
Subsection:	716.03.02 Lighting Standard Installation.
Part:	B) High Mast Installation
Number:	2) Concrete Base Installation
Revision:	Modification of Chart and succeeding paragraphs within this section:

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	<table><tr><td colspan="8">Drilled Shaft Depth Data</td></tr><tr><td colspan="2">Level Ground</td><td colspan="2">3:1 Ground Slope</td><td colspan="2">2:1 Ground Slope</td><td colspan="2">1.5:1 Ground Slope (2)</td></tr><tr><td>Soil</td><td>Rock</td><td>Soil</td><td>Rock</td><td>Soil</td><td>Rock</td><td>Soil</td><td>Rock</td></tr><tr><td>17 ft</td><td>7 ft</td><td>19 ft</td><td>7 ft</td><td>20 ft</td><td>7 ft</td><td>(1)</td><td>7 ft</td></tr></table><table><tr><td colspan="4">Steel Requirements</td></tr><tr><td colspan="2">Vertical Bars</td><td colspan="2">Ties or Spiral</td></tr><tr><td>Size</td><td>Total</td><td>Size</td><td>Spacing or Pitch</td></tr><tr><td>#10</td><td>16</td><td>#4</td><td>12 inch</td></tr></table> (1): Shaft length is 22' for cohesive soil only. For cohesionless soil, contact geotechnical branch for design. (2): Do not construct high mast drilled shafts on ground slopes steeper than 1.5:1 without the approval of the Division of Traffic. If rock is encountered during drilling operations and confirmed by the engineer to be of sound quality, the shaft is only required to be further advanced into the rock by the length of rock socket shown in the table. The total length of the shaft need not be longer than that of soil alone. Both longitudinal rebar length and number of ties or spiral length shall be adjusted accordingly. If a shorter depth is desired for the drilled shaft, the contractor shall provide, for the state's review and approval, a detailed column design with individual site specific soil and rock analysis performed and approved by a Professional Engineer licensed in the Commonwealth of Kentucky. Spiral reinforcement may be substituted for ties. If spiral reinforcement is used, one and one-half closed coils shall be provided at the ends of each spiral unit. Subsurface conditions consisting of very soft clay or very loose saturated sand could result in soil parameters weaker than those assumed. Engineer shall consult with the geotechnical branch if such conditions are encountered. The bottom of the drilled hole shall be firm and thoroughly cleaned so no loose or compressible materials are present at the time of the concrete placement. If the drilled hole contains standing water, the concrete shall be placed using a tremie to displace water. Continuous concrete flow will be required to insure full displacement of any water. The reinforcement and anchor bolts shall be adequately supported in the proper positions so no movement occurs during concrete placement. Welding of anchor bolts to the reinforcing cage is unacceptable, templates shall be used. Exposed portions of the foundation shall be formed to create a smooth finished surface. All forming shall be removed upon completion of foundation construction.
Subsection: **Part:** **Revision:**	716.03.03 Trenching. A) Trenching of Conduit for Highmast Ducted Cables. Add the following after the first sentence: If depths greater than 24 inches are necessary, obtain the Engineer's approval and maintain the required conduit depths coming into the junction boxes. No payment for additional junction boxes for greater depths will be allowed.

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Subsection:	716.03.03 Trenching.
Part:	B) Trenching of Conduit for Non-Highmast Cables.
Revision:	Add the following after the second sentence: If depths greater than 24 inches are necessary for either situation listed previously, obtain the Engineer's approval and maintain the required conduit depths coming into the junction boxes. No payment for additional junction boxes for greater depths will be allowed.
Subsection:	716.03.10 Junction Boxes.
Revision:	Replace subsection title with the following: Electrical Junction Box.
Subsection:	716.04.07 Pole with Secondary Control Equipment.
Revision:	Replace the paragraph with the following: The Department will measure the quantity as each individual unit furnished and installed. The Department will not measure mounting the cabinet to the pole, backfilling, restoration, any necessary hardware to anchor pole, or electrical inspection fees, and will consider them incidental to this item of work. The Department will also not measure furnishing and installing electrical service conductors, specified conduits, meter base, transformer, service panel, fused cutout, fuses, lighting arrestors, photoelectrical control, circuit breaker, contactor, manual switch, ground rods, and ground wires and will consider them incidental to this item of work.
Subsection:	716.04.08 Lighting Control Equipment.
Revision:	Replace the paragraph with the following: The Department will measure the quantity as each individual unit furnished and installed. The Department will not measure constructing the concrete base, excavation, backfilling, restoration, any necessary anchors, or electrical inspection fees, and will consider them incidental to this item of work. The Department will also not measure furnishing and installing electrical service conductors, specified conduits, meter base, transformer, service panel, fused cutout, fuses, lighting arrestors, photoelectrical control, circuit breakers, contactor, manual switch, ground rods, and ground wires and will consider them incidental to this item of work.
Subsection:	716.04.09 Luminaire.
Revision:	Replace the first sentence with the following: The Department will measure the quantity as each individual unit furnished and installed.
Subsection:	716.04.10 Fused Connector Kits.
Revision:	Replace the first sentence with the following: The Department will measure the quantity as each individual unit furnished and installed.
Subsection:	716.04.13 Junction Box.
Revision:	Replace the subsection title with the following: Electrical Junction Box Type Various.
Subsection:	716.04.13 Junction Box.
Part:	A) Junction Electrical.
Revision:	Rename A) Junction Electrical to the following: A) Electrical Junction Box.
Subsection:	716.04.14 Trenching and Backfilling.
Revision:	Replace the second sentence with the following: The Department will not measure excavation, backfilling, underground utility warning tape (if required), the restoration of disturbed areas to original condition, and will consider them incidental to this item of work.

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Subsection: 716.04.18 Remove Lighting.
Revision: Replace the paragraph with the following:
The Department will measure the quantity as a lump sum for the removal of lighting equipment. The Department will not measure the disposal of all equipment and materials off the project by the contractor. The Department also will not measure the transportation of the materials and will consider them incidental to this item of work.

Subsection: 716.04.20 Bore and Jack Conduit.
Revision: Replace the paragraph with the following: The Department will measure the quantity in linear feet. This item shall include all work necessary for boring and installing conduit under an existing roadway. Construction methods shall be in accordance with Sections 706.03.02, paragraphs 1, 2, and 4.

Subsection: 716.05 PAYMENT.
Revision: Replace items 04810-04811, 20391NS835 and, 20392NS835 under Code, Pay Item, and Pay Unit with the following:

Code	Pay Item	Pay Unit
04810	Electrical Junction Box	Each
04811	Electrical Junction Box Type B	Each
20391NS835	Electrical Junction Box Type A	Each
20392NS835	Electrical Junction Box Type C	Each

Subsection: 723.02.02 Paint.
Revision: Replace sentence with the following: Conform to Section 821.

Subsection: 723.03 CONSTRUCTION.
Revision: Replace bullet 5) with the following: 5) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims,

Subsection: 723.03.02 Poles and Bases Installation.
Revision: Replace the first sentence with the following:
Regardless of the station and offset noted, locate all poles/bases behind the guardrail a minimum of four feet from the front face of the guardrail to the front face of the pole base.

Subsection: 723.03.02 Poles and Bases Installation.
Part: A) Steel Strain and Mastarm Poles Installation
Revision: Replace the second paragraph with the following: For concrete base installation, see Section 716.03.02, B), 2), Paragraphs 2-7. Drilled shaft depth shall be based on the soil conditions encountered during drilling and slope condition at the site. Refer to the design chart below:

Subsection: 723.03.02 Poles and Bases Installation.
Part: B) Pedestal or Pedestal Post Installation.
Revision: Replace the fourth sentence of the paragraph with the following: For breakaway supports, conform to Section 12 of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.

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Subsection: **Part:** **Revision:**	723.03.03 Trenching. A) Under Roadway. Add the following after the second sentence: If depths greater than 24 inches are necessary, obtain the Engineer's approval and maintain ether required conduit depths coming into the junction boxes. No payment for additional junction boxes for greater depths will be allowed.
Subsection: **Revision:**	723.03.11 Wiring Installation. Add the following sentence between the fifth and sixth sentences: Provide an extra two feet of loop wire and lead-in past the installed conduit in poles, pedestals, and junction boxes.
Subsection: **Revision:**	723.03.12 Loop Installation. Replace the fourth sentence of the 2nd paragraph with the following: Provide an extra two feet of loop wire and lead-in past the installed conduit in poles, pedestals, and junction boxes.
Subsection: **Revision:**	723.04.02 Junction Box. Replace subsection title with the following: Electrical Junction Box Type Various.
Subsection: **Revision:**	723.04.03 Trenching and Backfilling. Replace the second sentence with the following: The Department will not measure excavation, backfilling, underground utility warning tape (if required), the restoration of disturbed areas to original condition, and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.10 Signal Pedestal. Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, specified conduits, fittings, ground rod, ground wire, backfilling, restoring disturbed areas, or other necessary hardware and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.15 Loop Saw Slot and Fill. Replace the second sentence with the following: The Department will not measure sawing, cleaning and filling induction loop saw slot, loop sealant, backer rod, and grout and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.16 Pedestrian Detector. Replace the paragraph with the following: The Department will measure the quantity as each individual unit furnished, installed and connected to pole/pedestal. The Department will not measure installing R10-3e (with arrow) sign, furnishing and installing mounting hardware for sign and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.18 Signal Controller- Type 170. Replace the second sentence with the following: The Department will not measure constructing the concrete base or mounting the cabinet to the pole, connecting the signal and detectors, excavation, backfilling, restoration, any necessary pole mounting hardware, electric service, or electrical inspection fees and will consider them incidental to this item of work. The Department will also not measure furnishing and connecting the induction of loop amplifiers, pedestrian isolators, load switches, model 400 modem card; furnishing and installing electrical service conductors, specified conduits, anchors, meter base, fused cutout, fuses, ground rods, ground wires and will consider them incidental to this item of work.

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Subsection: **Revision:**	723.04.20 Install Signal Controller - Type 170. Replace the paragraph with the following: The Department will measure the quantity as each individual unit installed. The Department will not measure constructing the concrete base or mounting the cabinet to the pole, connecting the signal and detectors, and excavation, backfilling, restoration, any necessary pole mounting hardware, electric service, or electrical inspection fees and will consider them incidental to this item of work. The Department will also not measure connecting the induction loop amplifiers, pedestrian, isolators, load switches, model 400 modem card; furnishing and installing electrical service conductors, specified conduits, anchors, meter base, fused cutout, fuses, ground rods, ground wires and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.22 Remove Signal Equipment. Replace the paragraph with the following: The Department will measure the quantity as a lump sum removal of signal equipment. The Department will not measure the return of control equipment and signal heads to the Department of Highways as directed by the District Traffic Engineer. The Department also will not measure the transportation of materials of the disposal of all other equipment and materials off the project by the contractor and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.28 Install Pedestrian Detector Audible. Replace the second sentence with the following: The Department will not measure installing sign R10-3e (with arrow) and will consider it incidental to this item of work.
Subsection: **Revision:**	723.04.29 Audible Pedestrian Detector. Replace the second sentence with the following: The Department will not measure furnishing and installing the sign R10-3e (with arrow) and will consider it incidental to this item of work.
Subsection: **Revision:**	723.04.30 Bore and Jack Conduit. Replace the paragraph with the following: The Department will measure the quantity in linear feet. This item shall include all work necessary for boring and installing conduit under an existing roadway. Construction methods shall be in accordance with Sections 706.03.02, paragraphs 1, 2, and 4.
Subsection: **Revision:**	723.04.31 Install Pedestrian Detector. Replace the paragraph with the following: The Department will measure the quantity as each individual unit installed and connected to pole/pedestal. The Department will not measure installing sign R 10-3e (with arrow) and will consider it incidental to this item of work.
Subsection: **Revision:**	723.04.32 Install Mast Arm Pole. Replace the second sentence with the following: The Department will not measure arms, signal mounting brackets, anchor bolts, or any other necessary hardware and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.33 Pedestal Post. Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, anchor bolts, conduit, fittings, ground rod, ground wire, backfilling, restoration, or any other necessary hardware and will consider them incidental to this item of work.

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Subsection: 723.04.36 Traffic Signal Pole Base.
Revision: Replace the second sentence with the following: The Department will not measure excavation, reinforcing steel, anchor bolts, specified conduits, ground rods, ground wires, backfilling, or restoration and will consider them incidental to this item of work.

Subsection: 723.04.37 Install Signal Pedestal.
Revision: Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, anchor bolts, specified conduits, fittings, ground rod, ground wire, backfilling, restoration, or any other necessary hardware and will consider them incidental to this item of work.

Subsection: 723.04.38 Install Pedestal Post.
Revision: Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, anchor bolts, specified conduits, fittings, ground rod, ground wire, backfilling, restoration, or any other necessary hardware and will consider them incidental to this item of work.

Subsection: 723.05 PAYMENT.
Revision: Replace items 04810-04811, 20391NS835 and, 20392NS835 under Code, Pay Item, and Pay Unit with the following:

Code	Pay Item	Pay Unit
04810	Electrical Junction Box	Each
04811	Electrical Junction Box Type B	Each
20391NS835	Electrical Junction Box Type A	Each
20392NS835	Electrical Junction Box Type C	Each

Subsection: 804.01.02 Crushed Sand.
Revision: Delete last sentence of the section.

Subsection: 804.01.06 Slag.
Revision: Add subsection and following sentence.
Provide blast furnace slag sand where permitted. The Department will allow steel slag sand only in asphalt surface applications.

Subsection: 804.04 Asphalt Mixtures.
Revision: Replace the subsection with the following:
Provide natural, crushed, conglomerate, or blast furnace slag sand, with the addition of filler as necessary, to meet gradation requirements. The Department will allow any combination of natural, crushed, conglomerate or blast furnace slag sand when the combination is achieved using cold feeds at the plant. The Engineer may allow other fine aggregates.

Subsection: 806.03.01 General Requirements.
Revision: Replace the second sentence of the paragraph with the following:
Additionally, the material must have a minimum solubility of 99.0 percent when tested according to AASHTO T 44 and PG 76-22 must exhibit a minimum recovery of 60 percent, with a J_{NR} (nonrecoverable creep compliance) between 0.1 and 0.5, when tested according to AASHTO TP 70.

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Subsection: **Table:** **Revision:**	806.03.01 General Requirements. PG Binder Requirements and Price Adjustment Schedule Replace the Elastic Recovery, % [3] (AASHTO T301) and all corresponding values in the table with the following: Test | Specification | 100% Pay | 90% Pay | 80% Pay | 70% Pay | 50%Pay[1] MSCR recovery, % [3] (AASHTO TP 70) | 60 Min. | ≥58 | 56 | 55 | 54 | <53
Subsection: **Table:** **Superscript:** **Revision:**	806.03.01 General Requirements. PG Binder Requirements and Price Adjustment Schedule (3) Replace [3] with the following: Perform testing at 64°C.
Subsection: **Revision:**	813.04 Gray Iron Castings. Replace the reference to "AASHTO M105" with "ASTM A48".
Subsection: **Number:** **Revision:**	813.09.02 High Strength Steel Bolts, Nuts, and Washers. A) Bolts. Delete first paragraph and "Hardness Number" Table. Replace with the following: A) Bolts. Conform to ASTM A325 (AASHTO M164) or ASTM A490 (AASHTO 253) as applicable.
Subsection: **Revision:**	814.04.02 Timber Guardrail Posts. Third paragraph, replace the reference to "AWPA C14" with "AWPA U1, Section B, Paragraph 4.1".
Subsection: **Revision:**	814.04.02 Timber Guardrail Posts. Replace the first sentence of the fourth paragraph with the following: Use any of the species of wood for round or square posts covered under AWPA U1.
Subsection: **Revision:**	814.04.02 Timber Guardrail Posts. Fourth paragraph, replace the reference to "AWPA C2" with "AWPA U1, Section B, Paragraph 4.1".
Subsection: **Revision:**	814.04.02 Timber Guardrail Posts. Delete the second sentence of the fourth paragraph.
Subsection: **Revision:**	814.05.02 Composite Plastic. 1) Add the following to the beginning of the first paragraph: Select composite offset blocks conforming to this section and assure blocks are from a manufacturer included on the Department's List of Approved Materials. 2) Delete the last paragraph of the subsection.
Subsection: **Revision:**	816.07.02 Wood Posts and Braces. First paragraph, replace the reference to "AWPA C5" with "AWPA U1, Section B, Paragraph 4.1".
Subsection: **Revision:**	816.07.02 Wood Posts and Braces. Delete the second sentence of the first paragraph.
Subsection: **Revision:**	818.07 Preservative Treatment. First paragraph, replace all references to "AWPA C14" with "AWPA U1, Section A".

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Subsection: **Revision:**	834.14 Lighting Poles. Replace the first sentence with the following: Lighting pole design shall be in accordance with loading and allowable stress requirements of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims, with the exception of the following: The Cabinet will waive the requirement stated in the first sentence of Section 5.14.6.2 – Reinforced Holes and Cutouts for high mast poles (only). The minimum diameter at the base of the pole shall be 22 inches for high mast poles (only).
Subsection **Revision:**	834.14.03 High Mast Poles. Remove the second and fourth sentence from the first paragraph.
Subsection **Revision:**	834.14.03 High Mast Poles. Replace the third paragraph with the following: Provide calculations and drawings that are stamped by a Professional Engineer licensed in the Commonwealth of Kentucky.
Subsection: **Revision:**	834.14.03 High Mast Poles. Replace paragraph six with the following: Provide a pole section that conforms to ASTM A 595 grade A with a minimum yield strength of 55 KSI or ASTM A 572 with a minimum yield strength of 55 KSI. Use tubes that are round or 16 sided with a four inch corner radius, have a constant linear taper of .144 in/ft and contain only one longitudinal seam weld. Circumferential welded tube butt splices and laminated tubes are not permitted. Provide pole sections that are telescopically slip fit assembled in the field to facilitate inspection of interior surface welds and the protective coating. The minimum length of the telescopic slip splices shall be 1.5 times the inside diameter of the exposed end of the female section. Use longitudinal seam welds as commended in Section 5.15 of the AASHTO 2013 Specifications. The thickness of the transverse base shall not be less than 2 inches. Plates shall be integrally welded to the tubes with a telescopic welded joint or a full penetration groove weld with backup bar. The handhole cover shall be removable from the handhole frame. One the frame side opposite the hinge, provide a mechanism on the handhole cover/frame to place the Department's standard padlock as specified in Section 834.25. The handhole frame shall have two stainless studs installed opposite the hinge to secure the handhole cover to the frame which includes providing stainless steel wing nuts and washers. The handhole cover shall be manufactured from 0.25 inch thick galvanized steel (ASTM A 153) and have a neoprene rubber gasket that is permanently secured to the handhole frame to insure weather-tight protection. The hinge shall be manufactured from 7-guage stainless steel to provide adjustability to insure weather-tight fit for the cover. The minimum clear distance between the transverse plate and the bottom opening of the handhole shall not be less than the diameter of the bottom tube of the pole but needs to be at least 15 inches. Provide products that are hot-dip galvanized to the requirements of either ASTM A123 (fabricated products) or ASTM A 153 (hardware items).
Subsection: **Revision:**	834.16 ANCHOR BOLTS. Insert the following sentence at the beginning of the paragraph: The anchor bolt design shall follow the NCHRP Report 494 Section 2.4 and NCHRP 469 Appendix A Specifications.

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Subsection: **Revision:**	834.17.01 Conventional. Add the following sentence after the second sentence: Provide a waterproof sticker mounted on the bottom of the housing that is legible from the ground and indicates the wattage of the fixture by providing the first two numbers of the wattage.
Subsection: **Revision:**	834.21.01 Waterproof Enclosures. Replace the last five sentences in the second paragraph with the following sentences: Provide a cabinet door with a louvered air vent, filter-retaining brackets and an easy to clean metal filter. Provide a cabinet door that is keyed with a factory installed standard no. 2 corbin traffic control key. Provide a light fixture with switch and bulb. Use a 120-volt fixture and utilize a L.E.D. bulb (equivalent to 60 watts minimum). Fixture shall be situated at or near the top of the cabinet and illuminate the contents of the cabinet. Provide a 120 VAC GFI duplex receptacle in the enclosure with a separate 20 amp breaker.
Subsection: **Revision:**	835.07 Traffic Poles. Replace the first sentence of the first paragraph with the following: Pole diameter and wall thickness shall be calculated in accordance with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.
Subsection: **Revision:**	835.07 Traffic Poles. *Replace the first sentence of the fourth paragraph with the following: Ensure transverse plates have a thickness ≥ 2 inches. *Add the following sentence to the end of the fourth paragraph: The bottom pole diameter shall not be less than 16.25 inches.
Subsection: **Revision:**	835.07 Traffic Poles. Replace the third sentence of the fifth paragraph with the following: For anchor bolt design, pole forces shall be positioned in such a manner to maximize the force on any individual anchor bolt regardless of the actual anchor bolt orientation with the pole.
Subsection: **Revision:**	835.07 Traffic Poles. Replace the first and second sentence of the sixth paragraph with the following: The pole handhole shall be 25 inches by 6.5 inches. The handhole cover shall be removable from the handhole frame. On the frame side opposite the hinge, provide a mechanism on the handhole cover/frame to place the Department's standard padlock as specified in Section 834.25. The handhole frame shall have two stainless studs installed opposite the hinge to secure the handhole cover to the frame which includes providing stainless steel wing nuts and washers. The handhole cover shall be manufactured from 0.25 inch thick galvanized steel (ASTM 153) and have a neoprene rubber gasket that is permanently secured to the handhole frame to insure weather-tight protection. The hinge shall be manufactured from 7 gauge stainless steel to provide adjustability to insure a weather-tight fit for the cover. The minimum clear distance between the transverse plate and the bottom opening of the handhole shall not be less than the diameter of the bottom tube but needs to be at least 12 inches.

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Subsection:	835.07 Traffic Poles.
Revision:	*Replace the first sentence of the last paragraph with the following: Provide calculations and drawings that are stamped by a Professional Engineer licensed in the Commonwealth of Kentucky. *Replace the third sentence of the last paragraph with the following: All tables referenced in 835.07 are found in the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.
Subsection:	835.07.01 Steel Strain Poles.
Revision:	Replace the second sentence of the second paragraph with the following: The detailed analysis shall be certified by a Professional Engineer licensed in the Commonwealth of Kentucky.
Subsection:	835.07.01 Steel Strain Poles.
Revision:	Replace number 7. after the second paragraph with the following: 7. Fatigue calculations should be shown for all fatigue related connections. Provide the corresponding detail, stress category and example from table 11.9.3.1-1.
Subsection:	835.07.02 Mast Arm Poles.
Revision:	Replace the second sentence of the fourth paragraph with the following: The detailed analysis shall be certified by a Professional Engineer licensed in the Commonwealth of Kentucky.
Subsection:	835.07.02 Mast Arm Poles.
Revision:	Replace number 7) after the fourth paragraph with the following: 7) Fatigue calculations should be shown for all fatigue related connections. Provide the corresponding detail, stress category and example from table 11.9.3.1-1.
Subsection:	835.07.03 Anchor Bolts.
Revision:	Add the following to the end of the paragraph: There shall be two steel templates (one can be used for the headed part of the anchor bolt when designed in this manner) provided per pole. Templates shall be contained within a 26.5 inch diameter. All templates shall be fully galvanized (ASTM A 153).
Subsection:	835.16.05 Optical Units.
Revision:	Replace the 3rd paragraph with the following: The list of certified products can be found on the following website: http://www.intertek.com.
Subsection:	835.19.01 Pedestrian Detector Body.
Revision:	Replace the first sentence with the following: Provide a four holed pole mounted aluminum rectangular housing that is compatible with the pedestrian detector.
Subsection:	843.01.01 Geotextile Fabric.
Table:	TYPE I FABRIC GEOTEXTILES FOR SLOPE PROTECTION AND CHANNEL LINING
Revision:	Add the following to the chart:

Property	Minimum Value[(1)]	Test Method
CBR Puncture (lbs)	494	ASTM D6241
Permittivity (1/s)	0.7	ASTM D4491

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Subsection: 843.01.01 Geotextile Fabric.
Table: TYPE II FABRIC GEOTEXTILES FOR UNDERDRAINS
Revision: Add the following to the chart:

Property	Minimum Value[1]	Test Method
CBR Puncture (lbs)	210	ASTM D6241
Permittivity (1/s)	0.5	ASTM D4491

Subsection: 843.01.01 Geotextile Fabric.
Table: TYPE III FABRIC GEOTEXTILES FOR SUBGRADE OR EMBANKMENT STABILIZATION
Revision: Add the following to the chart:

Property	Minimum Value[1]	Test Method
CBR Puncture (lbs)	370	ASTM D6241
Permittivity (1/s)	0.05	ASTM D4491

Subsection: 843.01.01 Geotextile Fabric.
Table: TYPE IV FABRIC GEOTEXTILES FOR EMBANKMENT DRAINAGE BLANKETS AND PAVEMENT EDGE DRAINS
Revision: Add the following to the chart:

Property	Minimum Value[1]	Test Method
CBR Puncture (lbs)	309	ASTM D6241
Permittivity (1/s)	0.5	ASTM D4491

Subsection: 843.01.01 Geotextile Fabric.
Table: TYPE V HIGH STRENGTH GEOTEXTILE FABRIC
Revision: Make the following changes to the chart:

Property	Minimum Value[1]	Test Method
CBR Puncture (lbs)	618	ASTM D6241
Grab Strength (lbs)	700	ASTM D4632
Apparent Opening Size	U.S. #40[3]	ASTM D4751

[3] Maximum average roll value.

SPECIAL NOTE FOR BARCODE LABEL ON PERMANENT SIGNS

1.0 DESCRIPTION. Install barcode label on sign as specified in the Contract. Section references herein are to the Department's 2012 Standard Specifications for Road and Bridge Construction.

2.0 MATERIALS. The Department will provide the Contractor with a 2 inch x 1 inch foil barcode label for each permanent sign. A unique number will be assigned to each barcode label.

The Contractor shall contact the Operations and Pavement Management Branch in the Division of Maintenance at (502) 564-4556 to obtain the barcode labels.

3.0 CONSTRUCTION. Apply foil barcode label in the lower right quadrant of the sign back. Signs where the bottom edge is not parallel to the ground, the lowest corner of the sign shall serve as the location to place the barcode label. The barcode label shall be placed no less than one-inch and no more than three inches from any edge of the sign. The barcode must be placed so that the sign post does not cover the barcode label.

Barcodes shall be applied in an indoor setting with a minimum air temperature of 50°F or higher. Prior to application of the barcode label, the back of the sign must be clean and free of dust, oil, etc. If the sign is not clean, an alcohol swab shall be used to clean the area. The area must be allowed to dry prior to placement of the barcode label.

Data for each sign shall include the barcode number, MUTCD reference number, sheeting manufacturer, sheeting type, manufacture date, color of primary reflective surface, installation date, latitude and longitude using the North American Datum of 1983 (NAD83) or the State Plane Coordinates using an x and y ordinate of the installed location.

Data should be provided electronically on the TC 71-229 Sign Details Information and TC 71-230 Sign Assembly Information forms. The Contractor may choose to present the data in a different format provided that the information submitted to the Department is equivalent to the information required on the Department TC forms. The forms must be submitted in electronic format regardless of which type of form is used. The Department will not accept PDF or handwritten forms. These completed forms must be submitted to the Department prior to final inspection of the signs. The Department will not issue formal acceptance for the project until the TC 71-229 and TC-230 electronic forms are completed for all signs and sign assemblies on the project.

4.0 MEASUREMENT. The Department will measure all work required for the installation of the barcode label and all work associated with completion and submission of the sign inventory data (TC 71-229 and TC 71-230).

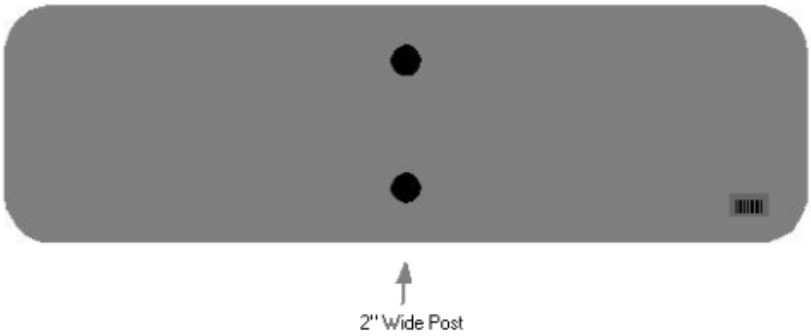
The installation of the permanent sign will be measured in accordance to Section 715.

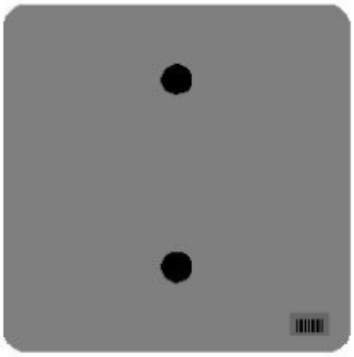
5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

Code	Pay Item	Pay Unit
24631EC	Barcode Sign Inventory	Each

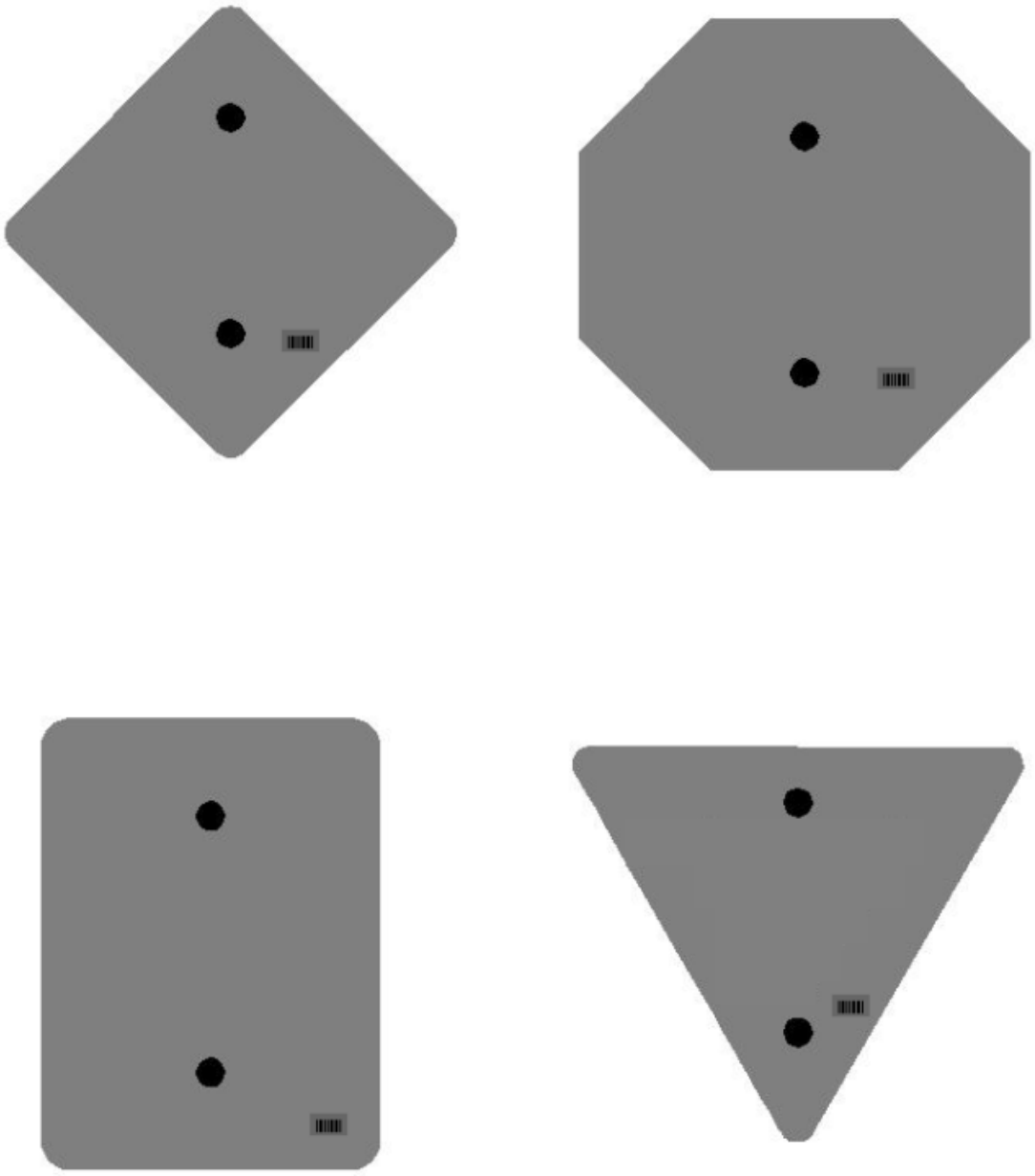
The Department will not make payment for this item until all barcodes are installed and sign inventory is complete on every permanent sign installed on the project. The Department will make payment for installation of the permanent sign in accordance to Section 715. The Department will consider payment as full compensation for all work required under this special note.

One Sign Post

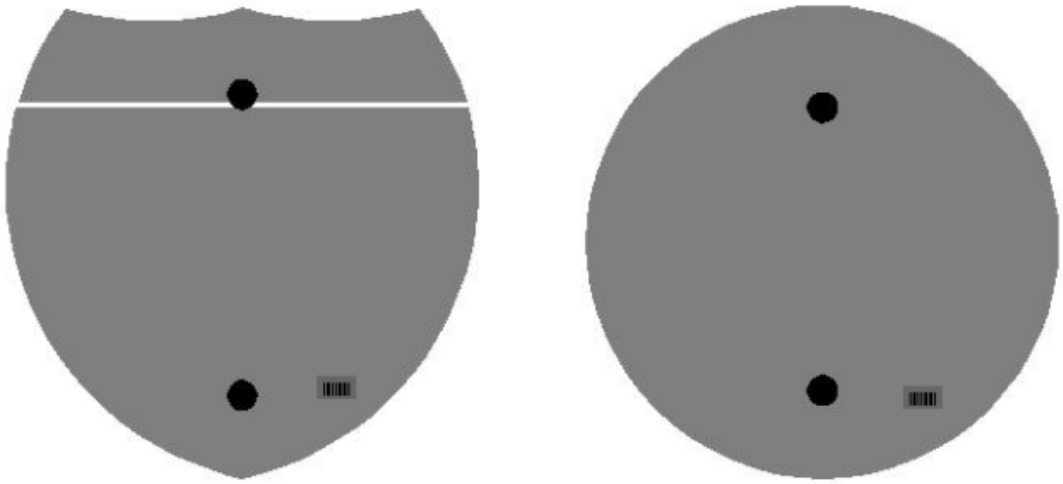


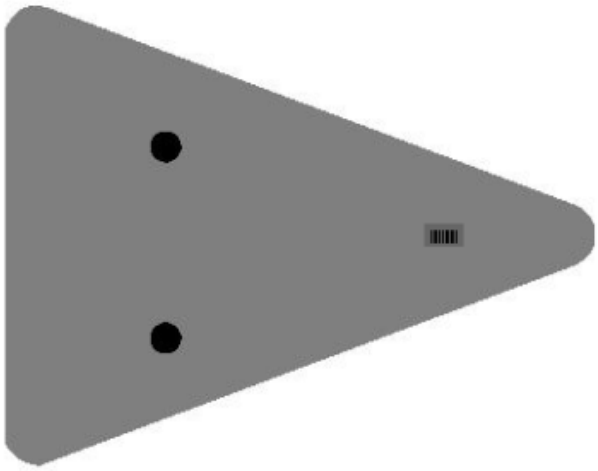


One Sign Post

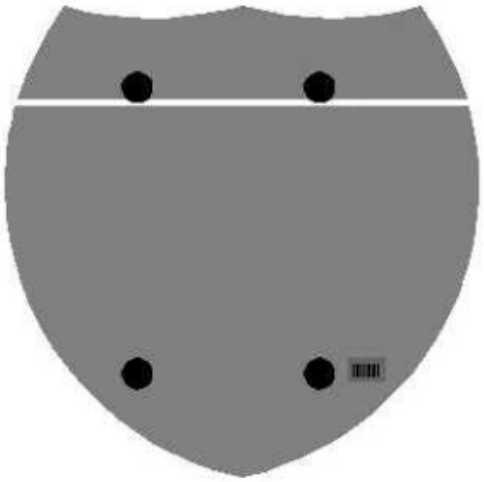


One Sign Post

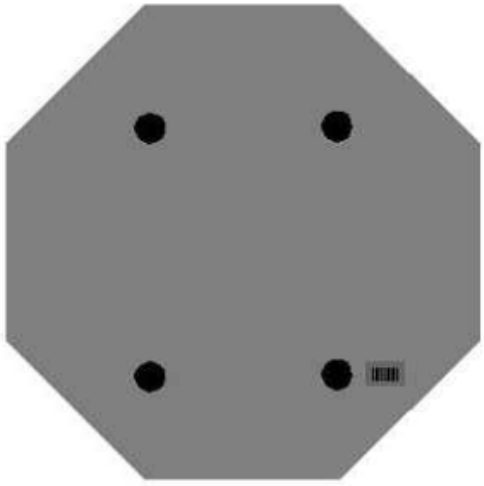




Double Sign Post

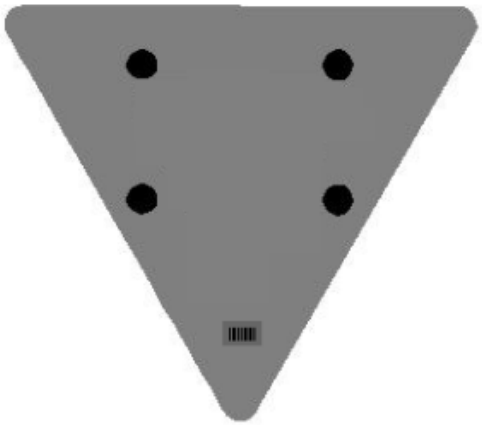


Interstate
Shield



48" Stop

2 Post Signs



PART III

EMPLOYMENT, WAGE AND RECORD REQUIREMENTS

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

LABOR AND WAGE REQUIREMENTS
APPLICABLE TO OTHER THAN FEDERAL-AID SYSTEM PROJECTS

I. APPLICATION

1. These contract provisions shall apply to all work performed on the contract by the contractor with his own organization and with the assistance of workmen under his immediate superintendence and to all work performed on the contract by piecework, station work or by subcontract. The contractor's organization shall be construed to include only workmen employed and paid directly by the contractor and equipment owned or rented by him, with or without operators.

2. The contractor shall insert in each of his subcontracts all of the stipulations contained in these Required Provisions and such other stipulations as may be required.

3. A breach of any of the stipulations contained in these Required Provisions may be grounds for termination of the contract.

II. NONDISCRIMINATION OF EMPLOYEES

AN ACT OF THE KENTUCKY
GENERAL ASSEMBLY TO PREVENT
DISCRIMINATION IN EMPLOYMENT
KRS CHAPTER 344
EFFECTIVE JUNE 16, 1972

The contract on this project, in accordance with KRS Chapter 344, provides that during the performance of this contract, the contractor agrees as follows:

1. The contractor shall not fail or refuse to hire, or shall not discharge any individual, or otherwise discriminate against an individual with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, national origin, sex, disability or age (between forty and seventy); or limit, segregate, or classify his employees in any way which would deprive or tend to deprive an individual of employment opportunities or otherwise adversely affect his status as an employee, because of such individual's race, color, religion, national origin, sex, disability or age (between forty and seventy). The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2. The contractor shall not print or publish or cause to be printed or published a notice or advertisement relating to employment by such an employer or membership in or any classification or referral for employment by the employment agency, indicating any preference, limitation, specification, or discrimination, based on race, color, religion, national origin, sex, disability or age (between forty and seventy), except that such notice or advertisement may indicate a preference, limitation, or specification based on religion, or national origin when religion, or national origin is a bona fide occupational qualification for employment.

3. If the contractor is in control of apprenticeship or other training or retraining, including on-the-job training programs, he shall not discriminate against an individual because of his race, color, religion, national origin, sex, disability or age (between forty and seventy), in admission to, or employment in any program established to provide apprenticeship or other training.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment. The contractor will take such action with respect to any subcontract or purchase order as the administrating agency may direct as a means of enforcing such provisions, including sanctions for non-compliance.

III. PAYMENT OF PREDETERMINED MINIMUM WAGES

1. These special provisions are supplemented elsewhere in the contract by special provisions which set forth certain predetermined minimum wage rates. The contractor shall pay not less than those rates.

2. The minimum wage determination schedule shall be posted by the contractor, in a manner prescribed by the Department of Highways, at the site of the work in prominent places where it can be easily seen by the workers.

IV. STATEMENTS AND PAYROLLS

1. All contractors and subcontractors affected by the terms of KRS 337.505 to 337.550 shall keep full and accurate payroll records covering all disbursements of wages to their employees to whom they are required to pay not less than the prevailing rate of wages. Payrolls and basic records relating thereto will be maintained during the course of the work and preserved for a period of one (1) year from the date of completion of this contract.

2. The payroll records shall contain the name, address and social security number of each employee, his correct classification, rate of pay, daily and weekly number of hours worked, itemized deductions made and actual wages paid.

3. The contractor shall make his daily records available at the project site for inspection by the State Department of Highways contracting office or his authorized representative.

Periodic investigations shall be conducted as required to assure compliance with the labor provisions of the contract. Interrogation of employees and officials of the contractor shall be permitted during working hours.

Aggrieved workers, Highway Managers, Assistant District Engineers, Resident Engineers and Project Engineers shall report all complaints and violations to the Division of Contract Procurement.

The contractor shall be notified in writing of apparent violations. The contractor may correct the reported violations and notify the Department of Highways of the action taken or may request an informal hearing. The request for hearing shall be in writing within ten (10) days after receipt of the notice of the reported violation. The contractor may submit

records and information which will aid in determining the true facts relating to the reported violations.

Any person or organization aggrieved by the action taken or the findings established as a result of an informal hearing by the Division of Contract Procurement may request a formal hearing.

4. The wages of labor shall be paid in legal tender of the United States, except that this condition will be considered satisfied if payment is made by a negotiable check, on a solvent bank, which may be cashed readily by the employee in the local community for the full amount, without discount or collection charges of any kind. Where checks are used for payments, the contractor shall make all necessary arrangements for them to be cashed and shall give information regarding such arrangements.

5. No fee of any kind shall be asked or accepted by the contractor or any of his agents from any person as a condition of employment on the project.

6. No laborers shall be charged for any tools used in performing their respective duties except for reasonably avoidable loss or damage thereto.

7. Every employee on the work covered by this contract shall be permitted to lodge, board, and trade where and with whom he elects and neither the contractor nor his agents, nor his employees shall directly or indirectly require as a condition of employment that an employee shall lodge, board or trade at a particular place or with a particular person.

8. Every employee on the project covered by this contract shall be an employee of either the prime contractor or an approved subcontractor.

9. No charge shall be made for any transportation furnished by the contractor or his agents to any person employed on the work.

10. No individual shall be employed as a laborer or mechanic on this contract except on a wage basis, but this shall not be construed to prohibit the rental of teams, trucks or other equipment from individuals.

No Covered employee may be employed on the work except in accordance with the classification set forth in the schedule mentioned above; provided, however, that in the event additional classifications are required, application shall be made by the contractor to the Department of Highways and (1) the Department shall request appropriate classifications and rates from the proper agency, or (2) if there is urgent need for additional classification to avoid undue delay in the work, the contractor may employ such workmen at rates deemed comparable to rates established for similar classifications provided he has made written application through the Department of Highways, addressed to the proper agency, for the supplemental rates. The contractor shall retroactively adjust, upon receipt of the supplemental rates schedule, the wages of any employee paid less than the established rate and may adjust the wages of any employee overpaid.

11. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any laborer or mechanic in any work-week in which he is employed on such work, to work in excess of eight hours in any calendar day or in excess of forty hours in such work-week unless such laborer or mechanic receives compensation at a rate not less than one and one half times his basic rate of pay for all hours worked in excess of eight hours in any calendar day or in excess of forty hours in such work-week. A laborer, workman or mechanic and an employer may enter into a written agreement or a collective bargaining agreement to work more than eight (8) hours a calendar day but not more than ten (10) hours a calendar day for the straight time hourly rate. This agreement shall be in writing and shall be executed prior to the employee working in excess of eight (8) hours, but not more than ten (10) hours, in any one (1) calendar day.

12. Payments to the contractor may be suspended or withheld due to failure of the contractor to pay any laborer or mechanic employed or working on the site of the work, all or part of the wages required under the terms of the contract. The Department may suspend or withhold payments only after the contractor has been given written notice of the alleged violation and the contractor has failed to comply with the wage determination of the Department of Highways.

13. Contractors and subcontractors shall comply with the sections of Kentucky Revised Statutes, Chapter 337 relating to contracts for Public Works.

Revised 2-16-95

EXECUTIVE BRANCH CODE OF ETHICS

In the 1992 regular legislative session, the General Assembly passed and Governor Brereton Jones signed Senate Bill 63 (codified as KRS 11A), the Executive Branch Code of Ethics, which states, in part:

KRS 11A.040 (6) provides:

No present or former public servant shall, within six (6) months of following termination of his office or employment, accept employment, compensation or other economic benefit from any person or business that contracts or does business with the state in matters in which he was directly involved during his tenure. This provision shall not prohibit an individual from returning to the same business, firm, occupation, or profession in which he was involved prior to taking office or beginning his term of employment, provided that, for a period of six (6) months, he personally refrains from working on any matter in which he was directly involved in state government. This subsection shall not prohibit the performance of ministerial functions, including, but not limited to, filing tax returns, filing applications for permits or licenses, or filing incorporation papers.

KRS 11A.040 (8) states:

A former public servant shall not represent a person in a matter before a state agency in which the former public servant was directly involved, for a period of one (1) year after the latter of:

a) The date of leaving office or termination of employment; or
b) The date the term of office expires to which the public servant was elected.

This law is intended to promote public confidence in the integrity of state government and to declare as public policy the idea that state employees should view their work as a public trust and not as a way to obtain private benefits.

If you have worked for the executive branch of state government within the past six months, you may be subject to the law's prohibitions. The law's applicability may be different if you hold elected office or are contemplating representation of another before a state agency.

Also, if you are affiliated with a firm which does business with the state and which employs former state executive-branch employees, you should be aware that the law may apply to them.

In case of doubt, the law permits you to request an advisory opinion from the Executive Branch Ethics Commission, Room 136, Capitol Building, 700 Capitol Avenue, Frankfort, Kentucky 40601; telephone (502) 564-7954.

Kentucky Equal Employment Opportunity Act of 1978

The requirements of the Kentucky Equal Employment Opportunity Act of 1978 (KRS 45.560-45.640) shall apply to this Contract. The apparent low Bidder will be required to submit EEO forms to the Division of Construction Procurement, which will then forward to the Finance and Administration Cabinet for review and approval. No award will become effective until all forms are submitted and EEO/CC has certified compliance. The required EEO forms are as follows:

- EEO-1: Employer Information Report
- Affidavit of Intent to Comply
- Employee Data Sheet
- Subcontractor Report

These forms are available on the Finance and Administration's web page under ***Vendor Information, Standard Attachments and General Terms*** at the following address: **https://www.eProcurement.ky.gov**.

Bidders currently certified as being in compliance by the Finance and Administration Cabinet may submit a copy of their approval letter in lieu of the referenced EEO forms.

For questions or assistance please contact the Finance and Administration Cabinet by email at **finance.contractcompliance@ky.gov** or by phone at 502-564-2874.

General Decision Number: KY140101 07/04/2014 KY101

Superseded General Decision Number: KY20130101

State: Kentucky

Construction Type: Highway

Counties: Boone, Campbell, Kenton and Pendleton Counties in Kentucky.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Modification Number	Publication Date
0	01/03/2014
1	04/25/2014
2	05/02/2014
3	05/09/2014
4	06/27/2014
5	07/04/2014

BRKY0002-005 06/01/2009

	Rates	Fringes
BRICKLAYER	$ 26.12	9.73

BROH0001-005 06/01/2008

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 25.75	8.60

CARP0698-001 05/01/2009

BOONE, CAMPBELL, KENTON & PENDLETON COUNTIES:

	Rates	Fringes
Carpenter & Piledrivermen	$ 27.05	9.69
Diver	$ 40.58	9.69

ELEC0212-007 06/02/2014

	Rates	Fringes
ELECTRICIAN	$ 26.74	16.45

ELEC0212-013 07/01/2013

	Rates	Fringes
Sound & Communication Technician	$ 22.50	9.51

ENGI0018-013 05/01/2014

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1	$ 32.44	13.90
GROUP 2	$ 32.32	13.90
GROUP 3	$ 31.28	13.90
GROUP 4	$ 30.10	13.90
GROUP 5	$ 24.64	13.90
GROUP 6	$ 32.69	13.90
GROUP 7	$ 32.94	13.90

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - Air Compressor on Steel Erection; Barrier Moving Machine; Boiler Operator on Compressor or Generator when mounted on a Rig; Cableway; Combination Concrete Mixer & Tower; Concrete Plant (over 4 yd. Capacity); Concrete Pump; Crane (All Types, Including Boom Truck, Cherry Picker); Crane-Compact, Track or Rubber over 4,000 lbs. capacity; Cranes-Self Erecting, Stationary, Track or Truck (All Configurations); Derrick; Dragline; Dredge (Dipper, Clam or Suction); Elevating Grader or Euclid Loader; Floating Equipment (All Types); Gradall; Helicopter Crew (Operator-Hoist or Winch); Hoe (all types); Hoisting Engine on Shaft or Tunnel Work; Hydraulic Gantry (Lifting System); Industrial-Type Tractor; Jet Engine Dryer (D8 or D9) Diesel Tractor; Locomotive (Standard Gauge); Maintenance Operator Class A; Mixer, Paving (Single or Double Drum); Mucking Machine; Multiple Scraper; Piledriving Machine (All Types); Power Shovel; Prentice Loader; Quad 9 (Double Pusher); Rail Tamper (with auto lifting & aligning device); Refrigerating Machine (Freezer Operation); Rotary Drill, on Caisson work; Rough Terrain Fork Lift with Winch/Hoist; Side-Boom; Slip-Form Paver; Tower Derrick; Tree Shredder; Trench Machine (Over 24" wide); Truck Mounted Concrete Pump; Tug Boat; Tunnel Machine and/or Mining Machine; & Wheel Excavator

GROUP 2 - Asphalt Paver; Automatic Subgrader Machine, Self-Propelled (CMI Type); Bobcat Type and/or Skid Steer Loader with Hoe Attachment Greater than 7,000 lbs.; Boring Machine More than 48"; Bulldozer; Endloader; Hydro Milling Machine; Horizontal Directional Drill (over 500,000 ft. lbs. thrust); Kolman-type Loader (production type-Dirt); Lead Greaseman; Lighting & Traffic Signal Installation Equipment (includes all groups or classifications); Material Transfer Equipment (Shuttle Buggy) Asphalt; Pettibone-Rail Equipment; Power Grader; Power Scraper; Push Cat; Rotomill (all), Grinders & Planers of All types; Trench Machine (24" wide & under); & Vermeer type Concrete Saw

GROUP 3 - A-Frame; Air Compressor on Tunnel Work (low pressure); Asphalt Plant Engineer; Bobcat-type and/or Skid Steer Loader with or without Attachments; Highway Drills (all types); Locomotive (narrow gauge); Material Hoist/Elevator; Mixer, Concrete (more than one bag

capacity); Mixer, one bag capacity (Side Loader); Power Boiler (Over 15 lbs. Pressure) Pump Operator installing & operating Well Points; Pump (4" & over discharge); Roller, Asphalt; Rotovator (lime soil stabilizer); Switch & Tie Tampers (without lifting & aligning device); Utility Operator (Small equipment); & Welding Machines

GROUP 4 - Backfiller; Ballast Re-locator; Bars, Joint & Mesh Installing Machine; Batch Plant; Boring Machine Operator (48" or less); Bull Floats; Burlap & Curing Machine; Concrete Plant (capacity 4 yd. & under); Concrete Saw (Multiple); Conveyor (Highway); Crusher; Deckhand; Farm-type Tractor with attachments (highway) except Masonry); Finishing Machine; Fireperson, Floating Equipment (all types); Fork Lift (highway); Form Trencher; Hydro Hammer; Hydro Seeder; Pavement Breaker; Plant Mixer; Post Driver; Post Hole Digger (Power Auger); Power Brush Burner; Power Form Handling Equipment; Road Widening Trencher; Roller (Brick, Grade & Macadam); Self-Propelled Power Spreader; Self-Propelled Power Subgrader; Steam Fireperson; Tractor (Pulling Sheepfoot, Roller or Grader); & Vibratory Compactor with Integral Power

GROUP 5 - Compressor (Portable, Sewer, Heavy & Highway); Drum Fireperson (Asphalt); Generator; Masonry Fork Lift; Inboard-Outboard Motor Boat Launch; Masonry Fork Lift; Oil Heater (asphalt plant); Oiler; Power Driven Heater; Power Sweeper & Scrubber; Pump (under 4" discharge); Signalperson; Tire Repairperson; & VAC/ALLS

GROUP 6 - Master Mechanic & Boom from 150 to 180

GROUP 7 - Boom from 180 and over

IRON0044-008 06/01/2013

	Rates	Fringes
Ironworkers:		
Fence Erector	$ 22.70	18.40
Structural	$ 25.00	18.40

IRON0372-004 06/01/2013

	Rates	Fringes
IRONWORKER, REINFORCING	$ 26.47	19.30

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* LABO0189-004 07/01/2014

PENDLETON COUNTY:

	Rates	Fringes
LABORER		
GROUP 1	$ 21.80	11.96
GROUP 2	$ 22.05	11.96
GROUP 3	$ 22.10	11.96
GROUP 4	$ 22.70	11.96

LABORERS CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Driller (All Types); Powderman & Blaster; Troxler & Concrete Tester if Laborer is Utilized

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LABO0265-009 05/01/2014

BOONE, CAMPBELL & KENTON COUNTIES:

	Rates	Fringes
LABORER		
GROUP 1	$ 27.72	9.80
GROUP 2	$ 27.89	9.80
GROUP 3	$ 28.22	9.80
GROUP 4	$ 28.67	9.80

LABORER CLASSIFICATIONS

GROUP 1 - Asphalt Laborer; Carpenter Tender; Concrete Curing Applicator; Dump Man (Batch Truck); Guardrail and Fence Installer; Joint Setter; Laborer (Construction); Landscape Laborer; Highway Lighting Worker; Signalization Worker;

Mesh Handlers & Placer; Right-of-way Laborer; Riprap Laborer & Grouter; Scaffold Erector; Seal Coating; Surface Treatment or Road Mix Laborer; Sign Installer; Slurry Seal; Utility Man; Bridge Man; Handyman; Waterproofing Laborer; Flagperson; Hazardous Waste (level D); Diver Tender; Zone Person & Traffic Control

GROUP 2 - Skid Steer; Asphalt Raker; Concrete Puddler; Kettle Man (Pipeline); Machine Driven Tools (Gas, Electric, Air); Mason Tender; Brick Paver; Mortar Mixer; Power Buggy or Power Wheelbarrow; Sheeting & Shoring Man; Surface Grinder Man; Plastic Fusing Machine Operator; Pug Mill Operator; & Vacuum Devices (wet or dry); Rodding Machine Operator; Diver; Screwman or Paver; Screed Person; Water Blast, Hand Held Wand; Pumps 4" & Under (Gas, Air or Electric) & Hazardous Waste (level C); Air Track and Wagon Drill; Bottom Person; Cofferdam (below 25 ft. deep); Concrete Saw Person; Cutting with Burning Torch; Form Setter; Hand Spiker (Railroad); Pipelayer; Tunnel Laborer (without air) & Caisson; Underground Person (working in Sewer and Waterline, Cleaning, Repairing & Reconditioning); Sandblaster Nozzle Person; & Hazardous Waste (level B)

GROUP 3 - Blaster; Mucker; Powder Person; Top Lander; Wrencher (Mechanical Joints & Utility Pipeline); Yarner; Hazardous Waste (level A); Concrete Specialist; Concrete Crew in Tunnels (With Air-pressurized - $1.00 premium); Curb Setter & Cutter; Grade Checker; Utility Pipeline Tapper; Waterline; and Caulker

GROUP 4 - Miner; & Gunite Nozzle Person

TUNNEL LABORER WITH AIR-PRESSURIZED ADD $1.00 TO BASE RATE

SIGNAL PERSON WILL RECEIVE THE RATE EQUAL TO THE RATE PAID THE LABORER CLASSIFICATION FOR WHICH HE OR SHE IS SIGNALING.

PAIN0012-016 05/01/2014

	Rates	Fringes
PAINTER		
Bridge	$ 24.39	8.71
Bridge Equipment Tender and Containment Builder	$ 20.73	8.71
Brush & Roller	$ 23.39	8.71
Sandblasting & Water Blasting	$ 24.14	8.71
Spray	$ 23.89	8.71

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* PLUM0392-008 06/01/2014

	Rates	Fringes
PLUMBER	$ 29.80	17.79

SUKY2010-161 02/05/1996

	Rates	Fringes
Truck drivers:		
GROUP 1	$ 15.85	4.60
GROUP 2	$ 16.29	4.60

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - Driver

GROUP 2 - Euclid Wagon; End Dump; Lowboy; Heavy Duty Equipment; Tractor-Trailer Combination; & Drag

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

Fringe benefit amounts are applicable for all hours worked except when otherwise noted.

These rates are listed pursuant to the Kentucky Determination No. CR-14-IV-HWY dated July 14, 2014.

No laborer, workman or mechanic shall be paid at a rate less than that of a Journeyman except those classified as bona fide apprentices.

Apprentices or trainees shall be permitted to work as such subject to Administrative Regulations adopted by the Commissioner of Workplace Standards. Copies of these regulations will be furnished upon request from any interested person.

Before using apprentices on the job the contractor shall present to the Contracting Officer written evidence of registration of such employees in a program of a State apprenticeship and training agency approved and recognized by the U. S. Bureau of Apprenticeship and Training. In the absence of such a State agency, the contractor shall submit evidence of approval and registration by the U. S. Bureau of Apprenticeship and Training.

The contractor shall submit to the Contracting Officer, written evidence of the established apprenticeship-journeyman ratios and wage rates in the project area, which will be the basis for establishing such ratios and rates for the project under the applicable contract provisions.

TO: EMPLOYERS/EMPLOYEES

PREVAILING WAGE SCHEDULE:

The wages indicated on this wage schedule are the least permitted to be paid for the occupations indicated. When an employee works in more than one classification, the employer must record the number of hours worked in each classification at the prescribed hourly base rate.

OVERTIME:

Overtime is to be paid after an employee works eight (8) hours a day or forty (40) hours a week, whichever gives the employee the greater wages. At least time and one-half the base rate is required for all overtime. A laborer, workman or mechanic and an employer may enter into a written agreement or a collective bargaining agreement to work more than eight (8) hours a calendar day but not more than ten (10) hours a calendar day for the straight time hourly rate. Wage violations or questions should be directed to the designated Engineer or the undersigned.

Diana Castle Radcliffe, P.E.
Director, Division of Construction Procurement
Frankfort, Kentucky 40622

PART IV

INSURANCE

INSURANCE

The Contractor shall procure and maintain the following insurance in addition to the insurance required by law:

1) Commercial General Liability-Occurrence form – not less than $2,000,000 General aggregate, $2,000,000 Products & Completed Aggregate, $1,000,000 Personal & Advertising, $1,000,000 each occurrence.

2) Automobile Liability- $1,000,000 per accident

3) Employers Liability:

   a) $100,000 Each Accident Bodily Injury
   b) $500,000 Policy limit Bodily Injury by Disease
   c) $100,000 Each Employee Bodily Injury by Disease

4) The insurance required above must be evidenced by a Certificate of Insurance and this Certificate of Insurance must contain one of the following statements:
   a) "policy contains no deductible clauses."
   b) "policy contains _____ (amount) deductible property damage clause but company will pay claim and collect the deductible from the insured."

5) KENTUCKY WORKMEN'S COMPENSATION INSURANCE. The contractor shall furnish evidence of coverage of all his employees or give evidence of self-insurance by submitting a copy of a certificate issued by the Workmen's Compensation Board.

The cost of insurance is incidental to all contract items. All subcontractors must meet the same minimum insurance requirements.

PART V

BID ITEMS

141254

PROPOSAL BID ITEMS

Report Date 8/1/14

Section: 0001 - PAVING - ALTERNATE 1 - CONCRETE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0010	00003		CRUSHED STONE BASE	7,450.00	TON		$	
0020	00212		CL2 ASPH BASE 1.00D PG64-22	94.00	TON		$	
0030	00214		CL3 ASPH BASE 1.00D PG64-22	81.00	TON		$	
0040	00301		CL2 ASPH SURF 0.38D PG64-22	51.00	TON		$	
0050	00339		CL3 ASPH SURF 0.38D PG64-22	34.00	TON		$	
0060	02069		JPC PAVEMENT-10 IN	13,951.00	SQYD		$	
0070	02101		CEM CONC ENT PAVEMENT-8 IN	1,533.00	SQYD		$	
0080	02599		FABRIC-GEOTEXTILE TYPE IV	17,596.00	SQYD		$	
0090	02677		ASPHALT PAVE MILLING & TEXTURING	282.00	TON		$	
0100	10020NS		FUEL ADJUSTMENT	9,442.00	DOLL	$1.00	$	$9,442.00
0110	10203ND		PAVEMENT ADJUSTMENT (CONCRETE)	1.00	LS	$76,101.00	$	$76,101.00

Section: 0002 - PAVING - ALTERNATE 2 - ASPHALT

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0120	00003		CRUSHED STONE BASE	5,645.00	TON		$	
0130	00078		CRUSHED AGGREGATE SIZE NO 2	10,645.00	TON		$	
0140	00212		CL2 ASPH BASE 1.00D PG64-22	94.00	TON		$	
0150	00214		CL3 ASPH BASE 1.00D PG64-22	8,231.00	TON		$	
0160	00301		CL2 ASPH SURF 0.38D PG64-22	51.00	TON		$	
0170	00339		CL3 ASPH SURF 0.38D PG64-22	941.00	TON		$	
0180	02101		CEM CONC ENT PAVEMENT-8 IN	1,594.00	SQYD		$	
0190	02677		ASPHALT PAVE MILLING & TEXTURING	282.00	TON		$	
0200	10020NS		FUEL ADJUSTMENT	23,343.00	DOLL	$1.00	$	$23,343.00
0210	10030NS		ASPHALT ADJUSTMENT	36,426.00	DOLL	$1.00	$	$36,426.00
0220	10203ND		PAVEMENT ADJUSTMENT (ASPHALT)	1.00	LS	$99,424.00	$	$99,424.00

Section: 0003 - ROADWAY - ALTERNATE 1 - WITH CONCRETE PAVING ALTERNATE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0230	01811		STANDARD CURB AND GUTTER MOD	297.00	LF		$	
0240	01830		STANDARD INTEGRAL CURB	6,069.00	LF		$	
0250	01875		STANDARD HEADER CURB	297.00	LF		$	
0260	01880		BARRIER HEADER CURB	108.00	LF		$	
0270	01885		LIP HEADER CURB	21.00	LF		$	
0280	02014		BARRICADE-TYPE III	7.00	EACH		$	
0290	02159		TEMP DITCH	2,155.00	LF		$	
0300	02231		STRUCTURE GRANULAR BACKFILL	55.40	CUYD		$	
0310	02242		WATER	82.00	MGAL		$	
0320	02274		FENCE-6 FT CHAIN LINK	175.00	LF		$	
0330	02429		RIGHT-OF-WAY MONUMENT TYPE 1	10.00	EACH		$	
0340	02430		RIGHT-OF-WAY MONUMENT TYPE 1A	13.00	EACH		$	
0350	02545		CLEARING AND GRUBBING (APPROXIMATELY 6.9 ACRES)	1.00	LS		$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0360	02555		CONCRETE-CLASS B	35.90	CUYD		$	
0370	02562		TEMPORARY SIGNS	150.00	SQFT		$	
0380	02585		EDGE KEY	178.00	LF		$	
0390	02611		HANDRAIL-TYPE A-1	108.00	LF		$	
0400	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		$	
0410	02690		SAFELOADING	50.00	CUYD		$	
0420	02701		TEMP SILT FENCE	2,155.00	LF		$	
0430	02703		SILT TRAP TYPE A	6.00	EACH		$	
0440	02704		SILT TRAP TYPE B	6.00	EACH		$	
0450	02705		SILT TRAP TYPE C	6.00	EACH		$	
0460	02706		CLEAN SILT TRAP TYPE A	18.00	EACH		$	
0470	02707		CLEAN SILT TRAP TYPE B	18.00	EACH		$	
0480	02708		CLEAN SILT TRAP TYPE C	18.00	EACH		$	
0490	02709		CLEAN TEMP SILT FENCE	2,155.00	LF		$	
0500	02720		SIDEWALK-4 IN CONCRETE	2,361.00	SQYD		$	
0510	02726		STAKING	1.00	LS		$	
0520	05952		TEMP MULCH	26,282.00	SQYD		$	
0530	05953		TEMP SEEDING AND PROTECTION	26,282.00	SQYD		$	
0540	05964		20-10-10 FERTILIZER	1.37	TON		$	
0550	05990		SODDING	6,381.00	SQYD		$	
0560	06510		PAVE STRIPING-TEMP PAINT-4 IN	12,930.00	LF		$	
0570	06514		PAVE STRIPING-PERM PAINT-4 IN	7,140.00	LF		$	
0580	06565		PAVE MARKING-THERMO X-WALK-6 IN	1,739.00	LF		$	
0590	06568		PAVE MARKING-THERMO STOP BAR-24IN	116.00	LF		$	
0600	06570		PAVE MARKING-PAINT CROSS-HATCH	5,201.00	SQFT		$	
0610	06572		PAVE MARKING-DOTTED LANE EXTEN	34.00	LF		$	
0620	06574		PAVE MARKING-THERMO CURV ARROW	11.00	EACH		$	
0630	06576		PAVE MARKING-THERMO ONLY	4.00	EACH		$	
0640	08001		STRUCTURE EXCAVATION-COMMON	83.60	CUYD		$	
0650	08100		CONCRETE-CLASS A	774.00	CUYD		$	
0660	08150		STEEL REINFORCEMENT	13,975.00	LB		$	
0670	20423EC		WATERTIGHT FRAME AND LID	20.00	EACH		$	
0680	20782NS714		PAVE MARKING THERMO-BIKE	11.00	EACH		$	
0690	23158ES505		DETECTABLE WARNINGS	219.00	SQFT		$	
0700	23326EC		EXCAVATION-UNCLASSIFIED	13,504.00	CUYD		$	
0710	23791EC		PAVE STRIPING-CHEVRON MARKINGS	1,261.00	SQFT		$	

Section: 0004 - ROADWAY - ALTERNATE 2 - WITH ASPHALT PAVING ALTERNATE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0720	01811		STANDARD CURB AND GUTTER MOD	297.00	LF		$	
0730	01875		STANDARD HEADER CURB	3,926.00	LF		$	
0740	01880		BARRIER HEADER CURB	108.00	LF		$	
0750	02014		BARRICADE-TYPE III	7.00	EACH		$	
0760	02159		TEMP DITCH	2,155.00	LF		$	
0770	02231		STRUCTURE GRANULAR BACKFILL	55.40	CUYD		$	
0780	02242		WATER	82.00	MGAL		$	
0790	02274		FENCE-6 FT CHAIN LINK	174.00	LF		$	
0800	02429		RIGHT-OF-WAY MONUMENT TYPE 1	10.00	EACH		$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0810	02430		RIGHT-OF-WAY MONUMENT TYPE 1A	13.00	EACH		$	
0820	02545		CLEARING AND GRUBBING (APPROXIMATELY 6.9 ACRES)	1.00	LS		$	
0830	02555		CONCRETE-CLASS B	35.90	CUYD		$	
0840	02562		TEMPORARY SIGNS	150.00	SQFT		$	
0850	02585		EDGE KEY	218.00	LF		$	
0860	02611		HANDRAIL-TYPE A-1	108.00	LF		$	
0870	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		$	
0880	02690		SAFELOADING	50.00	CUYD		$	
0890	02701		TEMP SILT FENCE	2,155.00	LF		$	
0900	02703		SILT TRAP TYPE A	6.00	EACH		$	
0910	02704		SILT TRAP TYPE B	6.00	EACH		$	
0920	02705		SILT TRAP TYPE C	6.00	EACH		$	
0930	02706		CLEAN SILT TRAP TYPE A	18.00	EACH		$	
0940	02707		CLEAN SILT TRAP TYPE B	18.00	EACH		$	
0950	02708		CLEAN SILT TRAP TYPE C	18.00	EACH		$	
0960	02709		CLEAN TEMP SILT FENCE	2,155.00	LF		$	
0970	02720		SIDEWALK-4 IN CONCRETE	2,366.00	SQYD		$	
0980	02726		STAKING	1.00	LS		$	
0990	05952		TEMP MULCH	26,282.00	SQYD		$	
1000	05953		TEMP SEEDING AND PROTECTION	26,282.00	SQYD		$	
1010	05966		TOPDRESSING FERTILIZER	1.37	TON		$	
1020	05990		SODDING	1,783.00	SQYD		$	
1030	06510		PAVE STRIPING-TEMP PAINT-4 IN	12,930.00	LF		$	
1040	06514		PAVE STRIPING-PERM PAINT-4 IN	7,140.00	LF		$	
1050	06565		PAVE MARKING-THERMO X-WALK-6 IN	1,739.00	LF		$	
1060	06568		PAVE MARKING-THERMO STOP BAR-24IN	116.00	LF		$	
1070	06570		PAVE MARKING-PAINT CROSS-HATCH	5,201.00	SQFT		$	
1080	06572		PAVE MARKING-DOTTED LANE EXTEN	34.00	LF		$	
1090	06574		PAVE MARKING-THERMO CURV ARROW	11.00	EACH		$	
1100	06576		PAVE MARKING-THERMO ONLY	4.00	EACH		$	
1110	08001		STRUCTURE EXCAVATION-COMMON	83.60	CUYD		$	
1120	08100		CONCRETE-CLASS A	774.00	CUYD		$	
1130	08150		STEEL REINFORCEMENT	13,975.00	LB		$	
1140	20423EC		WATERTIGHT FRAME AND LID	20.00	EACH		$	
1150	20782NS714		PAVE MARKING THERMO-BIKE	11.00	EACH		$	
1160	23158ES505		DETECTABLE WARNINGS	211.00	SQFT		$	
1170	23326EC		EXCAVATION-UNCLASSIFIED	17,657.00	CUYD		$	
1180	23791EC		PAVE STRIPING-CHEVRON MARKINGS	1,261.00	SQFT		$	
1190	23818EC		GRAVITY RETAINING WALL	81.00	SQFT		$	

Section: 0005 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1200	00078		CRUSHED AGGREGATE SIZE NO 2	1.00	TON		$	
1210	00520		STORM SEWER PIPE-12 IN	34.00	LF		$	
1220	00521		STORM SEWER PIPE-15 IN	921.00	LF		$	
1230	00522		STORM SEWER PIPE-18 IN	691.00	LF		$	
1240	00524		STORM SEWER PIPE-24 IN	251.00	LF		$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1250	00526		STORM SEWER PIPE-30 IN	438.00	LF		$	
1260	00530		STORM SEWER PIPE-48 IN	164.00	LF		$	
1270	00531		STORM SEWER PIPE-54 IN	443.00	LF		$	
1280	01000		PERFORATED PIPE-4 IN	3,729.00	LF		$	
1290	01010		NON-PERFORATED PIPE-4 IN	8.00	LF		$	
1300	01456		CURB BOX INLET TYPE A	6.00	EACH		$	
1310	01496		DROP BOX INLET TYPE 3	1.00	EACH		$	
1320	01497		DROP BOX INLET TYPE 3 MOD	8.00	EACH		$	
1330	01538		DROP BOX INLET TYPE 7	2.00	EACH		$	
1340	01538		DROP BOX INLET TYPE 7 (MODIFIED)	2.00	EACH		$	
1350	01544		DROP BOX INLET TYPE 11	11.00	EACH		$	
1360	01547		DROP BOX INLET TYPE 12	102.00	LF		$	
1370	01568		DROP BOX INLET TYPE 13S	4.00	EACH		$	
1380	01581		DROP BOX INLET TYPE 16G	2.00	EACH		$	
1390	01756		MANHOLE TYPE A	2.00	EACH		$	
1400	01767		MANHOLE TYPE C	2.00	EACH		$	
1410	01767		MANHOLE TYPE C (MODIFIED)	2.00	EACH		$	
1420	01791		ADJUST MANHOLE FRAME TO GRADE	1.00	EACH		$	
1430	02600		FABRIC GEOTEXTILE TY IV FOR PIPE	5,589.00	SQYD	$2.00	$	$11,178.00
1440	20424EC		CONNECT TO EXIST MANHOLE	3.00	EACH		$	
1450	23131ER701		PIPELINE VIDEO INSPECTION	1,446.00	LF		$	
1460	24706ED		SPECIAL MEDIAN INLET	22.00	EACH		$	

Section: 0006 - UTILITY - ELECTRICAL

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1470	01781		ELECTRICAL MANHOLE (PRECAST CONCRETE MANHOLE & LID)	1.00	EACH		$	
1480	02220		FLOWABLE FILL	93.10	CUYD		$	
1490	03553		BEND 45 DEG 4 IN	26.00	EACH		$	
1500	03554		BEND 45 DEG 6 IN	12.00	EACH		$	
1510	03559		BEND 90 DEG 4 IN (36" RADIUS)	52.00	EACH		$	
1520	03560		BEND 90 DEG 6 IN (36" RADIUS)	10.00	EACH		$	
1530	08100		CONCRETE-CLASS A	61.90	CUYD		$	
1540	20731ND		INST M-C SHORT-SIDE SERVICE PIPING-1 IN	5.00	EACH		$	
1550	20811ND		INSTALL M-C LONG-SIDE SERVICE PIPING-1IN	5.00	EACH		$	
1560	21729EN		PVC CONDUIT-4 IN (SCHEDULE 40)	2,176.00	LF		$	
1570	22179NN		INST M-C LONG-SIDE SERVICE PIPING-2 IN	2.00	EACH		$	
1580	22802EN		GAS MAIN PL-2 IN	365.00	LF		$	
1590	22803EN		GAS MAIN PL-4 IN	2,000.00	LF		$	
1600	23430EC		PULL BOX-3 X 5	7.00	EACH		$	
1610	23431EC		CONDUIT-6 IN (PVC - SCHEDULE 40)	434.00	LF		$	
1620	23432EC		PULL BOX-2 X 3 CATV	1.00	EACH		$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1630	23471EC		GAS MAIN-8 IN PL	455.00	LF		$	
1640	24122EC		TRANSFORMER PAD	1.00	CUYD		$	
1650	24124EC		PVC CONDUIT-2 IN-SCHEDULE 40	686.00	LF		$	
1660	24230EC		ELECTRIC PIT (PRECAST CONCRETE CABLE PIT)	1.00	EACH		$	
1670	24634EC		BEND (45 DEG - 2 IN)	10.00	EACH		$	
1680	24634EC		BEND (2 IN - 36" RADIUS - 90 DEG)	14.00	EACH		$	

Section: 0007 - SEWER

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1690	01789		RECONSTRUCT MANHOLE (MANHOLE/CATCH BASIN REHABILITATION)	44.00	EACH		$	
1710	23478EC		CURE IN PLACE PIPE LINER-12 IN	423.00	LF		$	
1720	23479EC		CURE IN PLACE PIPE LINER-15 IN	543.00	LF		$	
1730	23480EC		CURE IN PLACE PIPE LINER-18 IN	442.00	LF		$	
1740	23481EC		CURE IN PLACE PIPE LINER-21 IN	85.00	LF		$	
1750	23482EC		SANITARY SEWER POINT REPAIR	20.00	EACH		$	
1760	24599EC		CURE IN PLACE PIPE LINER (10")	330.00	LF		$	
1770	24599EC		CURE IN PLACE PIPE LINER (24")	345.00	LF		$	
1780	24599EC		CURE IN PLACE PIPE LINER (30")	293.00	LF		$	
1790	24599EC		CURE IN PLACE PIPE LINER (42")	1,187.00	LF		$	
1800	24599EC		CURE IN PLACE PIPE LINER (48")	90.00	LF		$	
1810	24599EC		CURE IN PLACE PIPE LINER (60")	521.00	LF		$	
1820	24599EC		CURE IN PLACE PIPE LINER (66")	385.00	LF		$	
1830	24599EC		CURE IN PLACE PIPE LINER (60"X 40")	224.00	LF		$	
1840	24599EC		CURE IN PLACE PIPE LINER (84" X 60")	73.00	LF		$	

Section: 0008 - SIGNING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1850	06406		SBM ALUM SHEET SIGNS .080 IN	140.00	SQFT		$	
1860	06410		STEEL POST TYPE 1	290.00	LF		$	
1870	24631EC		BARCODE SIGN INVENTORY	28.00	EACH		$	

Section: 0009 - WATERLINE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1880	01091		DUCTILE IRON PIPE-4 IN	67.00	LF		$	
1890	01093		DUCTILE IRON PIPE-6 IN	30.00	LF		$	
1900	01095		DUCTILE IRON PIPE-8 IN	614.00	LF		$	
1910	01097		DUCTILE IRON PIPE-10 IN	10.00	LF		$	
1920	01099		DUCTILE IRON PIPE-12 IN	2,018.00	LF		$	
1930	03361		COPPER PIPE-1 IN	99.00	LF		$	
1940	03362		COPPER PIPE-1 1/2 IN	15.00	LF		$	
1950	03363		COPPER PIPE-2 IN	77.00	LF		$	
1960	03431		RELOCATE WATER METER	6.00	EACH		$	
1970	03434		REMOVE FIRE HYDRANT	3.00	EACH		$	
1980	03437		RECONNECT SERVICE (TO MAIN)	8.00	EACH		$	
1990	03464		TIE-IN 4 IN	3.00	EACH		$	
2000	03466		TIE-IN 6 IN	3.00	EACH		$	
2010	03468		TIE-IN 8 IN	1.00	EACH		$	
2020	03470		TIE-IN 10 IN	2.00	EACH		$	
2030	03528		GATE VALVE-8 IN	9.00	EACH		$	
2040	03532		GATE VALVE-12 IN	18.00	EACH		$	
2050	03550		CUT & CAP EXIST WATER MAIN	8.00	EACH		$	
2060	03553		BEND 45 DEG 4 IN	1.00	EACH		$	
2070	03556		BEND 45 DEG 12 IN	4.00	EACH		$	
2080	03563		BEND 45 DEG 8 IN	11.00	EACH		$	
2090	20156EC		FIRE HYDRANT ASSEMBLY	7.00	EACH		$	
2100	20794ND		REDUCER 8 IN X 6 IN	7.00	EACH		$	
2110	20821ND		TEE 12 IN X 12 IN	3.00	EACH		$	
2120	20865ND		PLUG AND BLOCK 12IN	2.00	EACH		$	
2130	21053ND		REDUCER 8 IN X 4IN	3.00	EACH		$	
2140	21094ND		TEE 12 IN X 8 IN	6.00	EACH		$	
2150	21095ND		TEE 12 IN X 6 IN	6.00	EACH		$	
2160	22186NN		FLUSHING DEVICE-2 IN	1.00	EACH		$	
2170	23735EC		REDUCER-12 X 10 IN	2.00	EACH		$	
2180	24067EC		TEE-8X4 IN	1.00	EACH		$	
2190	24486ED		TEE (12 IN X 4 IN)	1.00	EACH		$	

Section: 0010 - DEMOBILIZATION &/OR MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
2200	02568		MOBILIZATION	1.00	LS		$	
2210	02569		DEMOBILIZATION	1.00	LS		$	